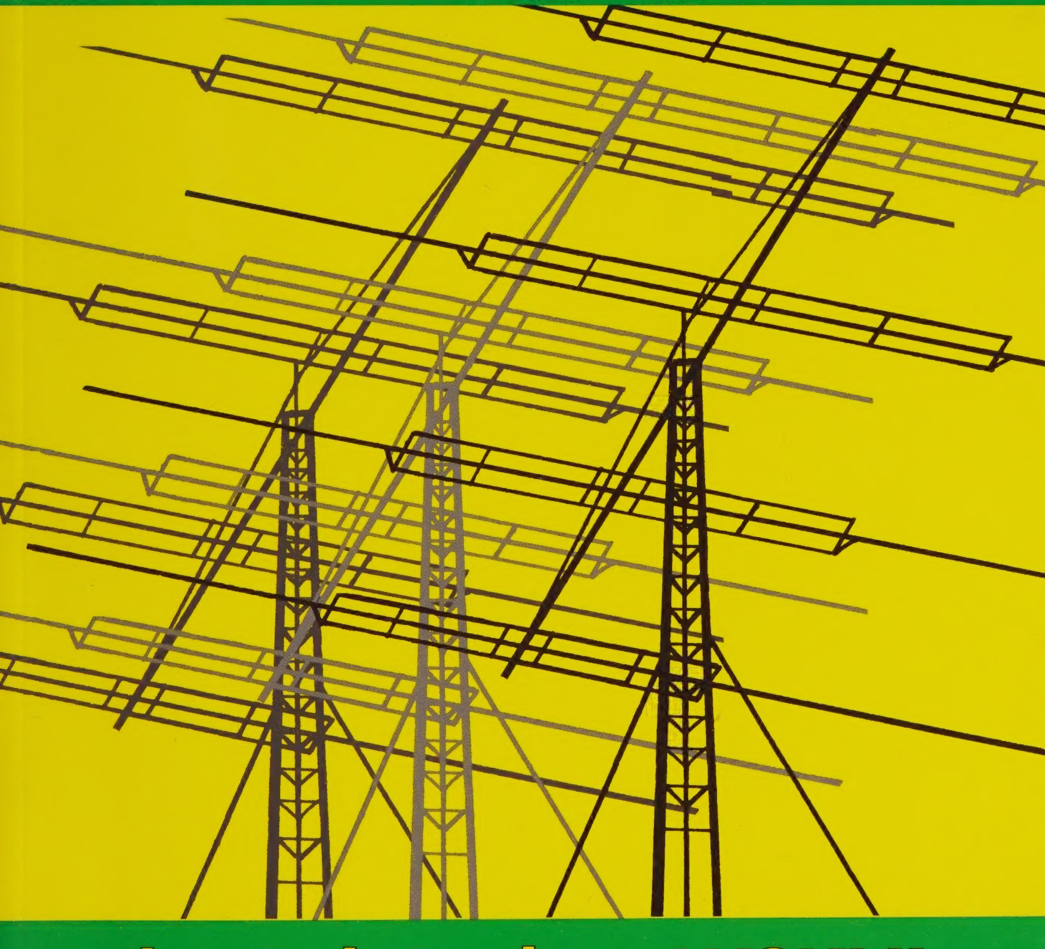
The COMPLETE DX'er

3rd Edition



by Bob Locher, W9KNI

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Gene Pearson AA8MI
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Third Edition
By Bob Locher, W9KNI
With drawings by Wayne T. Pierce, K3SUK

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Dedication

First, let me continue to re-dedicate this book to my wife Judy, whose patience and faith have so much to do with the original writing of this book, and whose continued support remains a personal treasure.

Second, to my parents – sadly both recently deceased – for their nuturing and support of a hobby they dimly understood that helped make it all possible.

There are many hams who greatly assisted my amateur radio career. Sadly, all too many of these wonderful people have passed on. I want to continue to honor their memory, so here is a list of some of those whose help to me was especially important:

Art Collins, W0CXX, who introduced me to the hobby and who signed off my novice license test, and who helped greatly in getting me on the air.

Bob White, W1CW, whose devoted stewardship of the DXCC program made DX'ing the wonderful game that it is today, and who I was glad to count as a personal friend.

Larry LeKashman, W2IOP, W9IOP, W2AB, whose book, "CQ DX" was the first real book on DX'ing, which taught me that becoming a good DX'er was a way of thinking and a skill set that could be learned, and who was a good friend.

Jim Rafferty, WA9UCE and later N6RJ, my very close and dear friend who died in his prime, struck down by melanoma cancer undoubtedly brought on by excessive sun exposure during several DX'peditions to tropic isles.

At this point the list of the living ham friends who have helped shape my hobby and this book is too long to present here – you all know who you are and you continue to deserve my heartfelt thanks.

For this edition, however, my special thanks to Dick Ross, K2MGA, and Dave Haupt, W8NF, each of who had a very real role in helping make it happen.

And last but hardly least – to Jere Benedict, my business partner in the real world, for whose help, assistance and patience I cannot thank enough.

73
Bob Locher, W9KNI

Introduction – Third Edition

A lot has changed in the DX'ing world since publication of the second edition. So, some of the material in this book is new, and much of the rest heavily revised. That said, the book strives to stay true to the roots of the earlier editions.

The author does ask you make a point of reading through this introduction – it sets the stage for the third edition.

The Complete DX'er was first published in early 1983; the second edition in 1989. This new edition, the third, is being published in 2003. As you can see, it has been a while between editions. I gave a lot of thought to bringing out a third edition, and for quite a while had decided not to. Obviously I have changed my mind. Why?

Since 1989, there had been a lot of changes in DX'ing, some of them positive, but in my opinion I felt that many of them negative. I began to feel that the DX'ing game that I had learned and loved had changed beyond recognition, and worse, had lost the allure and romance that made it so special.

The biggest single change was the coming of packet radio DX spotting nets. These nets developed quickly – they were so overwhelmingly effective at disseminating DX station "spots", both rare and common, that any active DX'er simply had to have some form of packet spotting to stay competitive. DX clubs banded together and established packet nodes for their areas, routing relays to other geographic areas were established, and within a few years 90% of American DX'ers were in range of a DX spotting packet node. Parallel developments in other countries were occurring at the same time.

As the Internet became well established, packet spotting networks were also integrated into the internet, and vice versa. Even more DX'ers started using it as a spotting medium. And, it became truly international – one can now easily get real time spots from DX'ers on the other side of the world.

Coupled with these innovations, all of which required some form of personal computer to utilize, software became available optimizing management of these resources. Users could easily filter spot reports to only show new countries, or new band countries, or new mode countries, or countries worked but for which no QSL had yet been received. What was the perhaps inevitable result of these new technologies?

For one thing, the level of apparent DX'ing activity on the bands dropped. Instead of spending hours tuning, looking for the adventure of a QSO with an exotic station, and the hope of working a new country, DX'ers started relying on the spotting networks to notify them of the DX – and many operators in the mean time simply quit tuning.

This meant fewer people watching the long path at sunrise and sunset, checking the polar paths for contacts in central Asia, or sifting through ten meter openings. Fewer people ragchewing, quieter, less interesting bands. Indeed, a practice has begun of stations, DX and otherwise, entering themselves on the spotting nets in hopes of raising a contact and trying to stir up a little action.

At the same time, new HF ham bands became available that offered new DX opportunities. While in many ways this was a major victory for ham radio world wide, at the same time it helped thin out the activity on any given band. Further, it meant that to be an effective DX'er one had to have good antennas for additional bands, as well as transceivers and linears that would support them. These requirements seemed to have the effect of further diminishing on the air activity.

The intriguing thing was that whenever a new DX'pedition came on the air, or when a rare DX station would be reported onto the DX spotting nets, instant pile-ups, often of towering proportions, appeared in a matter of seconds and minutes. Another thing was notable – participation in DX oriented contests grew significantly. Certainly the interest in HF DX'ing has remained, but clearly the operating patterns have changed significantly.

Another thing that hurt activity on the bands is success - anyone serious about chasing the DXCC program will likely achieve the honor roll within a few years. It can probably be done in 5 years; certainly in 7 or 8 if the operator is well equipped and serious about it. Working the last few countries to make it to the very top of the honor roll takes patience, but it is doable. Many once active DX'ers, knowing that they needed only a small handful of countries that would only be activated by DX'peditions, largely disappeared from the bands, pursuing other interests while waiting those last QSO's.

In that, I found myself like a lot of other hams – needing but one or two more counties to complete my DXCC, and with a seemingly declining amount of regular activity on the HF DX bands, my interest flagged. So, what changed my mind and renewed my interest?

There is a truism that is too often forgot. Ham Radio is a hobby. That means that it is supposed to be fun, or at least rewarding in ways we consider worthwhile. When what you are doing in ham radio no longer meets that test, you should be trying to figure out why, and make changes until it is fun again.

For me, I was getting a little stale – I decided I needed to do something new to relight the fire. In October of 1999, I bought myself an

Elecraft K2 transceiver kit. I had seen this little box operate, had had five minutes tuning it myself and had been impressed, and the specs looked pretty good. I thought something like this would be a lot of fun.

I had no idea!

The radio went together smoothly, taking just under 30 hours to assemble, and on November 5th of 1999 my new rig became QRV.

Now, let me be frank about something – many QRP operators limit themselves to 5 watts output – or 10 watts on SSB. Somehow these arbitrary numbers became the official QRP maximums. I do not subscribe to this limitation. When I hooked up the little rig, my watt meter said I was getting 12 watts out. That worked for me.

My first QSO was NØSS, who was running a K2 as well. My second QSO was VP2V/G3TXF, then JW/DJ3KR, followed by UT2QT. Hey! This stuff is FUN! I was really hooked. The joy had returned.

After many years of operating with maximum legal power always available, (though usually at 100 watts) I found myself operating QRP – OK, at 12 watts - and with the important point here being that there was no easy way to go QRO. I have always been an advocate of operating QRP – I believed then and believe now that any operator will learn a lot trying to work stations running QRP. The K2 has all the tools a DX'er needs – memories, split VFO operation, RIT, XIT etc.

Lots of times in past I had turned the output down, and tried my hand chasing DX with low power. And if I tired of it, or felt the need for more power, it was a simple matter to twist the output knob and be running 100 watts, and with the throwing of a couple switches be at 1500 watts output in seconds.

But operating QRP with no way to turn up the wick is different – no easy escape. Being forced by choice of rig to operate QRP proved to be a delicious new adventure. OK – I will confess – several times I did do panic switches back to the old rig – the transceiver and 1500 watt linear, to work stations allegedly in North Korea – the last country I needed. I would work them – and soon have them proved to be pirate stations. Sigh.

But since then I did work P5/4L4FN – and with my QRP rig! And he proved to be real!

But with the exception of alleged North Korean QSO's, all my operating since November 5th 1999 has been with my version of QRP. At this moment, in March of 2003, I have 308 countries worked with the little rig, mostly on CW but also with some SSB. And note that that did include several all time new countries for me – East Timor and Ducie Island for examples.

Knowledgeable DX stations I am working ask what I am using for an antenna, realizing that the signal is a product of both rig and antenna. I

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A Night on the Bands

Dinner is over, the dishes are washed, and my wife is at a meeting. I don't have any homework from the office. It's a fine night for DX'ing. I get a fresh cup of coffee, and head downstairs to my basement shack.

I think about how nice it would be to have a shack upstairs, with windows, but it really isn't important, especially when band conditions are good and the DX is rolling in. Conditions were pretty good this morning; I had a brief look at the bands before I headed for the office. Long path on twenty meters was good into the Middle-East, but there was nothing on I needed.

I turn the gear on, then go through my start-up check list. Let's see here. Antenna at 45 degrees for the Europe and Middle-East short path, OK. Linear tuned up for twenty meter CW. I log onto the net for packet coverage and look over the screen. Hmmm. Good solar flux, low A and K indices. A lot of DX stations being called in, mostly eastern Europe and western Asia on 20 meters, with the Far East on 15 meters. I look the list of recent spots over carefully – nothing I need is showing, but it is clear the bands are hot tonight.

I glance at the calendar. It's May 13. But my digital UTC clock shows it's 0037, which means the UTC date is May 14. I note the UTC date in the log. I'm always careful to write the UTC date into the log, having learned my lesson when I almost didn't get a T31 QSL I desperately needed. Only a friendly QSL manager willing to search through the logs saved me, when he found me in the log a day later than my QSL showed.

I settle the headphones over my ears, set the transceiver dial at 14,000 kHz and begin tuning the band.

The first signal I hear is a CQ, with a trace of flutter on it. I listen; it's a UK9 calling CQ. Nice S-6 signal, which isn't bad considering my antenna is on Europe. But I don't need Siberia, so I keep tuning on. There's a high speed CW signal, rather strong, sending in German. Pretty fist, too. Ah, he's turning it over to the other station; OK, it's DL1BU QSO'ing a YV1. And there's the YV1, not as strong, but good copy, and replying in German as well. It must be pretty late in Germany; yes, about 2:30 AM local time. I move up the band some more.

Next, I come across a VE3 calling CQ, and just above him a W5 calling VU2BK. Let's see if the VU answers him, and how strong he is. I turn the antenna straight north in anticipation. The W5 finishes his call. The VU comes right back, nice, strong, steady S-7 signal. The band IS good tonight. Wonder how fifteen is? But I'm not going to even peek until I see just what's happening on twenty first… I keep turning the knob.

Wait, what's happening here? At least six or eight stations are calling somebody. I wonder who? They are all signing their calls only, going pretty fast, too. OK, someone's coming back. Not too strong, but good copy. Yes, that must be who they're after; yes, now he's giving a QSL manager, a G3 station. There - he's signing his call. OK, it's ZC4BI, the British Bases on the island of Cyprus, which counts separately from the regular Cypriote stations for DXCC. Not a bad catch, but again one I don't need. I look over at the packet screen – yes, he's been called in – twice in fact, with two different stations reporting him. I continue tuning.

It must be near morning now in the Middle-East; perhaps something good will show up from there. Sure would be nice to tie into an A7 in Qatar, or an A9 in Bahrain, or to catch the ever elusive YI1BGD calling CQ from Baghdad. There has been reported activity from all three countries, but you surely couldn't prove it by my log. Those fellows seem to do a lot of their operating in the cool hours of the early morning, and tonight the band certainly has the propagation to carry the path if one of them does show up.

I hear a raucous CQ, T7 with a chirp. OK, it's an LZ. A lot of those fellows are still using homebuilt gear, and aren't always able to get the parts necessary for a clean signal. But times are changing, and more and more east European stations are equipping themselves with the latest gear and have signals to match. Already, the signals from obviously homebrew rigs are fewer and fewer, and when they are gone I will miss them. They always add character and excitement to an open band.

The LZ has another station calling CQ just above him; it's a 4L4, a Georgian. The path into the Middle-East is in fine shape. Maybe I'm going to get lucky. I glance around at the gear, focusing my eyes for a moment on the equipment. Hey, the antenna is still pointed straight north, from when I was listening to the VU2. I ease it back around to 45 degrees. The 4L4 comes up part of an S unit. I continue turning the knob, slowly, a bit at a time.

I come across a station using the Cyrillic Morse letters that are not used in English Morse interspersed with International Morse characters. Probably it's a Russian. Yes, he turns it over; it's UK9CBB working a UW3. A night like this is pure joy to listen to, with stations from all over the world coming through. My receiver dial is a magic carpet gone mad, with never an idea of what lies on the next kilohertz, only the knowledge that whoever I will hear there will likely be far away, in a strange land. Even if I don't find a new country - and I rarely do - listening to an open band is always exciting.

There's a VE3 calling CQ. Here's a PY signing clear with a ZS6. There's a weak CQ. OK, it's a WB5. Wait a minute. He's too weak to be in W5 land. Besides, he has that sound on his signal that only comes on signals from a long way away. Darn, he quit. But it was some prefix followed by WB5BJL. Almost had it but a burst of QRN got him. Maybe he'll come back and call CQ again; I don't hear anyone calling him. Wait –there is another station just off his frequency – hmm – a YO calling CQ. I listen for at least another minute, but no sign of the WB5. Guess he heard that YO too and figured the frequency was QRM'd. So he probably moved. I quit waiting and start tuning higher up the band again.

I find a UN7, and an HA. Then an ISØ. Years ago, they were pretty scarce; I remember my early years of DX'ing, when an IS1, as they were in those days, was rare, and it took me several years to snag one. Hey, there's that WB5 again, a little higher up the band, calling CQ. OK, this time let's get his whole call. He's in the clear. Yes, it's something 7 slash WB5BJL. Hey, it's A7/WB5BJL! An A71! Qatar! A new one! If I get him, that is.

I punch the spot button on the transceiver, and quickly zero his frequency. I confirm that my rig is in transceiver mode, then punch the synch button to lock both my transmit and receive frequencies together in case I need to go split. (On many transceivers this is marked "A=B.") I hit the linear power switch. The filaments of the 3-500Zs come to life, the plate voltage rises, and I switch to full power. The whirr of the blower becomes faintly audible. The plate voltage needle settles at 3500 volts; I'm ready. He's still calling CQ. Hope no one else has spotted him. He's pretty weak. Hope he can hear me. I carefully re-check to be sure I'm dead on his frequency. Yes, I'm ready.

There, he signs. I start calling him, with one hand on the transceiver output level. I don't want to overdrive the final. Oops, too fast on the keyer. I drop the speed a bit, trying to match the speed he used in calling CQ, as I make my call, "WB5BJL DE W9KNI W9KNI AR." I listen, holding my breath. Darn, he came back to someone else, an HB9. OK, let's copy it...

"..579 579 HR QTH DOHA DOHA QATAR ES NAME RALPH RALPH BT PSE QSL VIA HOME CALL HW CPY? HB9AMO DE A7/WB5BJL KN". OK, if he's for real it definitely is a new one for me. I look for the HB9 and find him about 400 hertz higher than the WB5. I hope and pray the HB9 isn't punching the call into the packet system and waking the whole of Europe with his catch. But no, he's not making any big deal of the A7 part of the call sign, any more than I did when I called.

The HB9 doesn't seem interested in a ragchew with the WB5, thank goodness. The quicker I can get this fellow the better, before a pile-up forms. The HB9 passes his QTH and name, and only a 559 signal report. Good, the A7 isn't strong in Europe. That should improve my chances; it means there's less chance that a horde of Europeans will find him. I decide not to try a tail end call; it may upset the WB5, and may alert some other DX'er tuning the band. To any knowledgeable DX'er, a tail end call being dropped is a strong hint that something might be up. At this point I don't know that any one else is waiting in the wings, but there sure is no reason to help attract attention. I change to "split mode" and zero my transmit frequency on the HB9. I wait, listening to the HB9. As I do so I am hoping a mob of hungry DX'ers is not doing the same thing. If ever there is an occasion where I get paranoid, this is it. There, the HB9 is saying 73 and turning it back to the A71.

I tune back down to the A7's frequency. Yes, he's sending his 73's, and signs clear. They exchange dit-dits, and I call, "WB5BJL WB5BJL DE W9KNI W9KNI AR". There is certainly no sense in adding the A7 part of his call; the WB5 knows what the rest of his call is, and if I don't snag him on this call, I don't want to be attracting competition. I'm not just your ordinary dummy. I finish my call and listen, again holding my breath. Darn, he's not coming back to anyone, but there was no one else calling when I finished my call. Wait, he's transmitting; "W9KN? W9KN? PSE AGN DE A7/WB5BJL KN". All right! I start calling again, "WB5BJL DE W9KNI W9KNI KNI KNI KNI W9KNI AR". I hold my breath again.

Yes! "W9KNI W9KNI DE A7/WB5BJL R GM OM ES TNX CL BT UR RST 569 569 HR IN DOHA DOHA QATAR ES NAME IS RALPH RALPH BT TNX FIRST W QSO BT QRV YESTERDAY BT RUNNING 100 WATTS AND LW FROM HOTEL ROOM BT QSL HOME QTH OK BT HW CPY? W9KNI DE A7/WB5BJL KN". As soon as I hear my call I enter the UTC time, another habit learned from hard experience.

"R WB5BJL DE W9KNI R FB RALPH ES TNX QSO ES FIRST A7 NEW ONE FOR ME BT UR RST 559 559 HR NR CHICAGO NR CHICAGO ES NAME BOB BOB BT RIG HR

0037
K3SUK

1500 WATTS ES SKYHAWK TRIBAND YAGI BT QSL OK VIA HC BT WX HR 66 F TODAY ES CLR BT HW CPY? WB5BJL DE W9KNI KN".

"R OK BOB ES TNX INFO BT WX HR HOT HI HI GOING TO BE 120 DEGREES TDY OK BOB TNX QSO QSL SURE 73 ES KP COOL W9KNI DE WB5BJL/A71 SK".

"R A7/WB5BJL DE W9KNI R FB RALPH ES TNX INFO ES NEW COUNTRY BT VRY EXCITED BT QSL SURE ES BEST DX 73 DE W9KNI SK". Whew! A new one! HOTTTTTT DOG! I glance at my computer screen – no sign of him on packet. Gleefully, I finish the log entry, then start typing in his call for the spot. But before I hit <ENTER> to send the spot, I listen. There is a single signal calling him, yes, a W0. Someone else who found a good one by tuning. I decide to wait a moment. The W0 finishes his call, and the A7 is coming back to him. I wait to see what happens. Glad the 0 got him OK. This calls for a celebration; I decide to get another cup of coffee.

By the time I get back downstairs, the A7 has a pile-up calling him – I glance at the packet screen and see that the W0 called him in, and now the pile-up is growing geometrically. Well, with that mob on frequency, and the A71 already in the log, there's nothing left there for me, but conditions are still good. I better keep moving. Maybe I have the hot hand tonight. I start turning the knob again. Onward, ever onward.

Hmm. There's a UL7 with a 589 signal. What time is it? OK, it's 0217 Zulu. Gosh, it was pretty early in the morning for that A71. I'm still grinning over that one; a rare country gracing the log, an all time new one for me. Sure am glad I dug that WB5 out of the mud. I'll get the QSL off tomorrow. What's that weak CQ? OK, a YU3. There's another CQ above him. Ah, it's 3B8DA. Guess the sun must be rising in the Indian Ocean, OK. Nice signal, too. But another one I don't need. Keep turning the dial.

I finish going up through the band, move back down to 14,000, and begin tuning higher again. What's that? "5NN K". Clean, sharp fist, about 30 words per minute. There it is again, "R SK UP 5 K". This sounds promising. Let's see who it is. There's no one calling him on his frequency. No, there's a station – a K3 - signing his call. And a traffic cop telling him to QSY. And there went the DX station, but completely buried by the cop. Oh, if only those traffic cops had enough sense to hand out their citations a half kilohertz off.

Ah, the cop has quit. And there goes the unknown DX again, "N4AR 5NN K". I punch the synch button, locking my two VFO's together, then pop the "A" VFO five kHz. and look for N4AR. I don't spot him within a few seconds, so I throw the VFO switch back to the "B" VFO. Yes, there's the DX station. "R SK QRZ UP 5". I flip the VFO switch again, looking again five kilohertz up. Wow, what a mob scene. It seems like there must be hundreds of stations calling, but who are they chasing?

I look over at the packet screen and instantly get my answer – a T5. Huh. I never should have missed that. Then I realize my computer audio level is turned down, which I had done earlier during a phone call, and never restored, so I never heard the logging program alarm for a new one. I flip the VFO switch again to the T5's frequency. Yes, he's transmitting again. "K8CW 5NN K". I jump back up again. There are still plenty calling him, and within the few seconds I allot myself, I fail to find K8CW. I switch back down. Yes, there he is again. "R 73 QSL DJ6SI QRZ DE T55SI UP 5 K". OK, great. But what the heck is a T55? I punch a few keys for my spotting program and there it is. Somali Democratic Republic. Hey! That's what used to be a 6O1. And I need that one too!

He comes back to another station. I miss the call of who he is working, so I wait, with my transmit frequency now set five up, as instructed. There, "R SK UP 5 K". I start to call. No, that's too slow; the keyer is still fairly slow for the WB5/A71. I quickly crank the speed control up a bit. I finish my call and listen again. "1HZ 5NN K". I missed the prefix of who ever he's working now. This fellow is a fast worker. I jump the receiver back up five. No luck. I tune a little higher, but still nothing. Then I jump back to his transmit frequency; at the speed he's logging QSO's I can't afford to hang around waiting.

"UP 5 K". Yes, he was just finishing. I call again; "DE W9KNI K". and listen again. Yes, there he goes; "W2BA 5NN K". I know 2BA; he usually has a good signal, and he uses a bug instead of a keyer, so his fist is a bit more distinctive. I flip the VFO switch to look for BA's transmit frequency. Nothing at five up. I start checking higher in the band. I take a very brief look up to around ten kHz. higher, but still no luck. I flip the transceiver VFO back to the T55's frequency.

Yup, there he goes, "R 73 JACK SK QRZ DE T55SI QRZ UP 5 K". I move my transmit frequency ten kHz above him, and call blindly, "DE W9KNI K". I don't give him my call two times; clearly he is going with people who sign their call only once; which is one of the characteristics of a really good DX'pedition operator. I listen again. "W4QQN 5NN K". I pop back up again, looking for W4QQN, checking around ten kilohertz higher. Nothing.

This is getting ridiculous, not to mention frustrating. I know I could have heard W2BA if I could have found him, and the same is true of W4QQN; he's no slouch with a signal either. Clearly the DJ6 is listening other than the stated five kHz.up. In fact, I decide, he's probably listening up rather more than five, since I'm pretty sure he's not listening less than five. The "five" must be an indication that the minimum is five, and especially it means, "Don't call me on my frequency." Wish some of the traffic cops would take notice of that as well.

I glance at the packet screen – there is another entry for him, and a note "QSX up 14". I skip back to his frequency. Yes, there he goes, "R SK QRZ UP 5 K". I bump my transmit frequency to a spot 14 kHz above him and drop in my call, "W9KNI". I listen. He comes back; "WB4OSN 5NN K". I switch back to my transmit frequency and start quickly tuning higher. Hah! There! "5NN 73 DE WB4OSN SK"! I switch VFO's, leaving my transmit frequency on WB4OSN's frequency. The T55 signs clear, and I call, then listen on the T55's frequency. There, he comes back, "W4QM 5NN DALE K".

I switch back to my transmit frequency. Nothing. I tune a bit higher. Yes, there, about one higher, "4QM SK," almost twenty kilohertz above the T55's frequency. I switch back to the T55, and call when he clears. I finish my call again, and listen. "K4KQ 5NN K" I switch again to listen on my transmit frequency. Yes, there's K4KQ, about three quarters of a kHz. above my transmit frequency. Hmm. It looks like the T55 is moving up after every contact. I can play that game; I move up three quarters of a kilohertz above 4KQ. I switch again to the T55's frequency. Yes, he's transmitting, "UP 5 K".

Again I call. I listen; he comes back. "K5LM 5NN K". I go back up with my receiver to my transmit frequency. Yes, there's K5LM, virtually dead zero on my transmit frequency. I set up another three quarters of a kHz. higher. He clears. I call. He comes back again to W9VNE. I listen. Again, I'm almost dead zero on VNE'S frequency. I start to feel confident; I'm almost sure to get him within the next few calls, now that I've figured out his listening pattern. I hop back to the T55's transmit frequency.

"R SK QST QST MUST QRT NW FOR BED BT WILL BE QRV AGN TMW 73 DE T55SI SK CL".

ARRRRRGH!! Curses, foiled again. The story of my life, a minute late and a call short. But I quickly cool down. Who am I to complain? I've already gotten a new one tonight, a nice rare one, and besides, the T55 said he would be back on again tomorrow. And, I've got his pattern figured out pretty well; hopefully it shouldn't take long to nail him when he does come on tomorrow. He certainly is a fine operator. And Hope Springs Eternal.

I start tuning up the band again. It's pretty cluttered above the T55's frequency; there are still a lot of stations calling him that didn't get the message. But soon I'm clear of them, and the band is quieter. I glance at my clock. Huh, it's already nearly 0300 Zulu. The sun is definitely up now in the Middle-East, and must be so as well in Somalia, where the T55 is. Guess he must have been up all night, and intends to sleep during the daylight hours.

I hear my wife's voice upstairs; guess she must be back from the school meeting. I decide to go upstairs to chat with her a few minutes, and to brag about my new one in Qatar. I'll have to get the atlas out and show her where it is...

...In about 20 minutes I'm back in the shack. I decide to start tuning again from the bottom of the band. The band seems quieter now. I hear no Europeans at all. Though most of them are certainly in bed, I would expect to hear one or two if we had propagation, so we must have lost the path while I was upstairs.

I slowly work my way up the band, but it does go faster with fewer signals to check out. I keep hoping for a good African or someone in the Middle-East, but I seek in vain. Guess we really have lost the path. No, there's 9J2BO working a G, but that path is considerably easier to hold than one to the further north areas. I listen, but when the 9J2 turns it back I can't hear a trace of the G station.

I swing the antenna further to the south, for a quick look for FT5WK on Crozet, who the bulletins have listed once or twice in the last few months. I don't have much hope, though; the fellow has shown only rarely, and in a very inconsistent pattern, the kind that makes a DXer's nightmare. I decide to move the antenna to bisect the paths to the VP8/LU-Z islands and the paths to the FT islands. A move across the band yields nothing, however. It's getting late, now, 0348 Zulu, 10:48 PM CDST, and I have to rise early tomorrow for a breakfast meeting. Time to pull the switch. I turn off the gear, log off the net, and disconnect the antennas for lightning protection.

I leave the shack with a grin on my face. The A71 was a fine new one I did not expect, and almost a sure QSL. Too bad I didn't nail the T55, but I wasn't expecting to work him either, and he'll be back tomorrow. And I already have a handle on his operating pattern, which is sure to help. Even if propagation is off, that should be a decent path, and I should be able to manage it OK. At the top of the stairs, I switch off the basement lights, feeling rewarded. Besides, it was fun.

2

Basic Listening

Whatever your interest in DX'ing, whether it be a casual adventure on the bands of a summer evening or a determined and sustained march to the top of the DXCC Honor Roll, the first and most important skill you must have or must learn is how to listen. No other skill is as important for the DX'er.

Making a good start at learning how to listen is easy, fortunately, and indeed, it is fun. You are even almost guaranteed to work new ones in the process. And, you never will really stop learning how to listen; your skills get sharper from experience as time goes on. You may be puzzled at this point about listening. After all, isn't it a matter of just tuning the transceiver?

Of course, to a certain extent it is. However, the art of listening is also learning to let nothing get by you as you tune a band; a 6th sense about what band to be listening on, and knowing what heading to turn your antenna to if you have a rotary array. (Some of these aspects will be discussed more in depth later.)

Listening is snooping out schedules with rare ones being traded by other stations who would just as soon you weren't listening.

Listening is trolling the inter-Pacific nets at 3AM so you can nail the elusive YJ8 after the net is over. Listening is knowing when to listen, and when to not waste your time, especially when you have other obligations in life that also must be met.

Again, listening is the mental work of digging calls out of fierce QRM, or reading extremely weak signals. These, too, are skills that improve considerably with simple practice. It is the joy of taking the pulse of an open band, and listening to the world.

But it takes practice, and an understanding of what you, as a DX'er, are trying to accomplish. Two amateurs can sit down, side by side, at two identical receivers, using identical antennas listening to the same open band. The experienced and skilled listener will unearth country after country as he tunes across the band, digging rare ones out, exploring, probing, while the casual listener sitting next to him, spending the same amount of time and with the same objective, hears little or nothing of what's really going on.

But listening skills can be learned; indeed, as mentioned above, a great deal can be learned in a rather short time. In fact, if you have not already acquired some of the skills, once you have read and understood this chapter, you will almost instantly be twice as effective as a listener.

Before we turn the transceiver on at all, let's discuss a little of the hardware, and a few ground rules. First, let's check out your headphones. For most operators, good listening cannot be done effectively with a speaker; headphones are almost always the preferred choice, especially for CW. Since, presumably, you are going to be wearing headphones a good deal, you want to insure that they fit your head comfortably, and display no tendency to fall off. On the other hand, they should not clamp a death-grip on your head either. They should cut down outside noise considerably, but not so much so that you can't hear the family call you, or the phone ring. Also, they should let your ears breathe a bit; sweaty ears are not very comfortable, though at times that condition may be unavoidable.

There are many brands of communications headsets offered to the amateur, of which several models are excellent. And as so often the case with other things, the most expensive are not necessarily the best.

There are also many excellent, modestly priced stereo headphones available today, and, since they are designed for hours of listening to music, they tend to be fairly comfortable. Stereo headphones do suffer one disadvantage, in that they are designed for high fidelity listening, usually somewhere between 50 and 20,000 hertz. Amateur communication bandwidths for CW usually run from about 250 hertz to 1000 hertz, while SSB communications run typically from 300 to 3000 hertz. Unfortunately, most amateur transceivers generate white noise components that often go past 10,000 hertz, and this noise can be very fatiguing for the DX'ing listener, especially over long operating sessions.

If you find a pair of stereo headphones you fancy, there are several ways to eliminate the white noise. Many DX'ers use SCAF or DSP audio filters which reduce such noise, and offer significant other benefits as well. At the least, a by-pass capacitor can be placed across the audio output line for some roll-off of the high-frequency white noise component. The value for such a capacitor must be derived experimentally, and is, of course, significantly affected by the impedances involved. However, with low impedance 'phones, a value around 10 microfarads makes a good starting point for experimentation.

Since the hearing response of each of us is likely to be different from that of the next ham, headphones really should be tried out plugged into YOUR rig before finalizing a purchase. Check them out for comfort, fit, and for the pleasantness of the output into your ear. Most retailers are willing to allow a return on such items if the purchased headset is not comfortable for you. But ask about a possible return before the sale is final!

Next, take a look at the operator's chair. Since a good deal of time is likely to be spent in it, it should be a comfortable one. Your author uses a sturdy hardwood chair, once used in a doctor's waiting room and purchased cheap when the office was closed. It has proven very comfortable over the years. Many people choose soft chairs, but these may prove to be less comfortable over an extended operating session. In any case, care should be taken to insure that a chair is not going to become a source of operating fatigue.

Now, before you actually start tuning, there is one rule for your own good you should always follow! Always do general tuning with the AVC or AGC ON! Old time CW operators will tell you that the way to tune is with the AVC off, and one hand riding the RF gain control. They fail to tell you about Tinnitus, also known as ringing in the ears, which is a malady sure to shorten a DXer's career and reduce the quality of life in other ways should he come down with it. Tinnitus is caused by excessive exposure to high levels of static or very loud CW signals. A proper AVC circuit will protect you from most of this, along with an awareness of what could happen and a dose of common sense. Like, don't listen to a band with heavy static crashes with the receiver gain wide open.

The basic premise of learning how to listen is simple - you must identify every signal you hear. This does not mean you have to necessarily know the call of each station heard, but it does mean that you have to know whether he would be a new country for you. For example, if he's S-9, and saying that his QTH is Mansfield, Ohio, you might want to tune on. But, even then, you want to be sure that the station that he is in QSO with is not A51PN. But, as we will discuss more later, if he is in QSO with the A51, his fist or his voice will usually show it, and we would detect clues that suggest we should hang around and see what gives.

The ideal situation for a hungry DX'er is to find a station from a needed country calling CQ that no one else happens to hear. Then a simple one by two call is usually all it takes to put the DX into the log, even though the successful DX'er may not have one of the more outstanding signals on the band.

Consider three facts that are oft forgotten or ignored by DX'ers. The first is that the DX station must do something to initiate a contact when he gets on the air. Unless he is keeping a schedule, he has two choices - either he calls CQ, or he calls another station who is calling CQ or who is finishing a QSO. Mr. Rare DX does NOT start his day on the band with an automatic pile-up. Most of the operators in a pile-up are drawn to it by a packet spot; others by the discovery of the pile-up itself, with the loud signals of calling DX'ers. The trick is to catch the rare DX sending his first CQ, or at least finishing his first QSO, rather than tripping over him as he is pursued by a screaming pile-up offering the DX'er a greatly reduced chance of success.

The second fact is that if some one else does hear the DX station calling CQ at the same time you do, at least the pile-up you are in is composed of two people - you and the other calling station. All else being equal, you have a fifty-fifty chance against the other operator. Contrast that with your chances in a pile-up of a hundred stations, where, if everything is equal you have one chance in a hundred.

Of course, all things are NOT equal, but hopefully the point is clear. If you find a station in a new country by dint of careful listening, you have a far better chance of working him than if you find him under siege from a howling pile-up.

The third fact worthy of note is that the signal strength of most rare DX stations is average at best. The rare DX station rarely has a crushing signal into the States. Also, he almost assuredly already has "W" confirmed unless he's very new. So, to find him, especially when he's calling that day's first CQ, it's up to you to do the digging to scrape him out of the background.

Most DX'ers searching for new countries do not tune carefully, RF gain up, listening to every signal. Hence, they fail to hear that first CQ. They fail to find Mr. Rare DX in QSO with another station. They don't find him at all until the DX station is spotted on packet, creating an instant and huge pileup, or they may trip over a pile-up already formed on the DX station. Tuning for the pile-ups or waiting for the spot on the packet screen is a great way to rack up an SWL DXCC.

But if your goal is a QSL that confirms a two way QSO, waiting for the packet spot or tripping over the pile-up is a sure prescription for a lot of frustration. That is especially true if you do not have one of the dominating signals on the band. Patience is indeed a virtue, and one that the good DX'er needs plenty of in any case, but having the new one already in the log when the pile-up is growing exponentially beats the heck out of having to be patient and hoping you can outsmart the gang.

Remember, pile-ups don't usually start before the DX operator arrives, and few DX stations always show up at an exact time on an exact frequency. (Except for schedules.) Careful tuning will put DX stations into the log at a far faster rate than any other technique, and will give you the satisfaction of listening to howling pile-ups on stations you were the first to unearth calling CQ. It's a nice feeling...

You say that twenty is open nicely, and we have a bit of time for tuning? Let's go have a look around...

Ohhh-kay. The antenna is at 45 degrees, the direct shot at Europe and the Middle-East, and within a half S-unit of being optimized for the trans-polar Central Asians, and for the North and Central African states as well, a rich lode for the hungry prospector. We set the receiver at the bottom edge of the band, turn the RF gain up till the background noise makes a nice soft backdrop of band hiss and start slowly moving up the band.

There's our first signal; pretty loud. In QSO with someone. Clean, very steady signal; probably a W. Ragchewing; yes, he's asking the other fellow how his strawberries are doing. Somehow I rather doubt that A51PN is party to either side of this QSO. Ahh, he's turning it back. OK, he's working a VP9 and it's a W3. On we go. There's someone calling CQ, no where near as strong as the W3, but still excellent copy. Steady signal, there, he's signing his call, OK, it's F3AT. Keep turning the knob. There's a signal going rather fast; at least 35 words per minute. Good strong signal, S-8 or 9. Not quite as steady, bits of rapid QSB up and down. Probably a European a bit further north would be my guess. The nearer the pole, the more unstable the signal, it seems like, unless conditions are exceptionally steady. Ah, there, he's turning it over. Right, it's YO3AC working a PY in Brazil.

There's a rather weak signal just above the YO/PY QSO. Calling a W1. A G? No, G something, I think, but I'm not sure. Copied an 8 in his call though. Darn, almost had it. Wait, was that a PM8? Probably not. Phooey, he quit calling. Let's wait a moment and see what develops. No one is coming back to him. Yes, there he goes again, calling the W1 again. Sounds like a schedule. There's his call again. Yes, got it. GW8PG. OK, Wales. Nice, but I don't need it. Onward, ever onward.

Listen to that loud signal calling CQ. Sure would be surprised if that was a DX station. OK, he's signing. Well I'll be darned! It's FP5PS! I have one, in the log and on the wall, but they aren't exactly garden variety either. Just goes to show - even loud signals from nearby can be DX. Let's wait and see what kind of a pile-up he attracts. With a signal like that, he's sure to attract a big following in a hurry. There, he's signing. This ought to be good.

Huh. There's no one coming back to him. No, wait, there's a weak signal calling him. Giving him a one by two. A WB7. Yes, the FP5's coming back to him. Bet the WB7's pretty pleased; from the sound of his signal he can't be running much power. Well, maybe it's a new one for the WB7, but it sure isn't for me, and sitting around here listening to the QSO and speculating doesn't do my log book any good. Time to be moving on.

Ah, another QSO going on. Sounds like a DX signal for sure. Nope, he's saying QTH HR MADISON WIS MADISON WIS... must be a W9. The backscatter on his weak signal fooled me. Yes, OK, he's working an LA6. I keep going. Listen, there's someone calling CQ. Not too strong, but nice clean signal. Yes, a little flutter, generally the characteristic of a DX station. Yup, an HB9. Keep tuning. Catch that; another QRQ ragchew from the sound of it. Hmm. WX HR WET ES COOL, BEEN A WET SPRING IN LONDON... OK, nothing there for me; wonder who he's in QSO with; probably a W. He's pretty loud and he's ragchewing, a good sign that he's got a yagi or a quad, and that it is pointed to the States. Hey, I'm almost right; he turned it back to a VE3.

Ahhh. Some turkey is tuning up. Taking his sweet time about it too. Shouldn't require more than a few seconds of on the air time. Try to tell him that, though. See how his signal goes up and down in strength as he twiddles the knobs. Must be rich; new finals aren't cheap these days. Do I hear a weak signal under him? Yes, there's someone calling CQ, but I can only hear him when that turkey is out of resonance and his signal drops. There, he quits. Probably blew a fuse when the plate sagged into the screen. Served him right if it did. Dummy loads aren't that expensive. But the other station that was calling CQ is gone now too. Darn; I wonder if it was a good one?

No one is calling anyone, guess that carrier wiped out everyone. Let's hang around a few more seconds; maybe the CQ station will call again. Yup! There he goes again. Not very strong; I'm surprised I heard him at all under that carrier. What's that call sign? An OZ5? No, that isn't right. Hey! It's OY5FR! The Faroe Islands! That's one I need!

Quickly, I press the spotting button and tune the dial to match the note, then punch the synch VFO button. If I have to go split I'll at least have both VFO's on the right frequency to start. Check the keyer; yes, speed's about the same as his. Arghh. He's still calling CQ; the whole world will have found him by the time he's through. Ah, at last, he's signing. I pause a tiny second; whew, no one else is calling him.

I give him a one by two, and anxiously turn it back. There! The sweetest music in the world; my call coming back from his rig. Yesss! Quick, note the GMT time, before I forget when the QSO started. All right!

The OY seems to be uninterested in ragchewing, so I am soon finished with him, sitting there with a big grin on my face. That was pretty neat, the way we spotted the OY underneath the idiot tuning up; and then waiting him out to hear his call. Of course, by all rights, it should have been a G, or a DL, instead of a nice new country. But it wasn't! It was a new one. And we got him, by careful listening. But the day is not done. Let's tune some more. Maybe we'll get lucky again.

I listen one more minute on the frequency of the OY5. Several stations are calling him now, doubtless attracted by my signal when I worked him. But he seems to be gone now, probably put off by the small pileup he spawned. How sweet it is! I start moving the dial again, marching slowly up the band.

It still sounds the same. There's a DJ calling QRZ? I listen; a KP4 answers him. That should please the German. A W4 opens up with a CQ DX. Let's pause a moment and see what he snags; his signal is nice and loud here. He signs. I wait with him to see what surfaces. Yes, several stations are calling him; an HA, a YU and an IT9. I move on.

There's a weak signal, a bit chirpy, just about buried in the noise. I strain my ears, and advance the RF gain a bit higher. Still hard to copy. I crank in a bit more selectivity from the audio filter; yes that helped a bit. Move the dial a hair, to perhaps center him a bit better in the transceiver passband. Yes, that did help a bit more. What's he sending? That's not standard international Morse. Oh, OK, must be Cyrillic code; international Morse with extra elements for the Cyrillic alphabet. Probably a Russian station, but you can't be sure – many of the former members of the Soviet Union use Cyrillic characters, and several of them are countries I still need.

I keep listening; the station keeps sending without signing, working break-in with his contact, who is rather stronger. But soon I hear the "DSW" used by Russian speaking operators in closing their CW QSO's and I know he is about to sign. Yes, it's EZ8CQ! Turkmenistan. I know my situation there – I have two QSO's with EZ stations, but no QSL – and it has been a long time since I worked my two previous EZ's. Needless to say, I'm setting up for him as fast as I can go. I wait; he has signed clear, but I think that the other station he was in QSO with is still signing. Ah, there is the traditional "dit-dit" from the UG6. I call him, giving a one by two call.

I listen, waiting with bated breath. Nothing. I wait a few more seconds. Still nothing. I call again, a bit slower this time, and with a one by three call. Still nothing. In desperation, I try a three by four call; guaranteed to attract a dozen wolves to the frequency. Nada. Well, he wasn't very strong; perhaps he didn't hear me. But I did have a clear shot at him; perhaps next time my luck will be better. I start tuning up the band again.

There's a fairly loud signal calling CQ. But he has traces of flutter on his signal, and no sign of back scatter. Betcha he's DX. Good S-9 signal. Yes, it's DL1BU. Let's sit tight a minute and see if any one comes back to him; he's ending his CQ. Hah, listen to that! There must be five or six stations calling him, all W's from the sound of it. Funny; I've heard several fairly rare DX calls on the band, while a DL is common. Yet, the DL1 is the station getting the attention, while the rarer ones get hardly any interest.

But there's one other difference. The DL is fairly strong, and with a good fist. The other stations were much weaker, except the FP5, and he was so strong he sounded like a local. Hmmm, maybe there's a lesson to learn in that; perhaps most DX'ers on the one hand don't dig into the noise a bit, and on the other hand don't pay much attention to really strong signals either. But they sure can miss a lot that way.

Anyhow, that's their problem. I'm going to keep tuning.

Hey, there's a bit of a pile-up, just above the DL. It's all Europeans from the sound of it. Not that many of them, though. OK, someone loud is coming back to one of them; yes, it's XE2MX, off the back of my antenna. Some of those fellows are still calling him. Listen to that one with the chirp, that 7X2. Hey, wait a minute, I need a 7X2; that's Algeria.

But what should I do? I have a dilemma. The 7X is after the XE; he's not likely to take kindly to my calling him and attracting attention to him when he's after the XE. The XE is rare for him, probably a new one, and probably a new zone, too. And I can be fairly sure a W9 call isn't going to send shivers down the Algerian's spine. I'd better wait a bit and see what gives; maybe something will happen so I'll get a better chance of working him instead of getting him mad at me.

I listen to the XE; he obviously does not know that the 7X2 is calling him, or possibly he doesn't care; he's working an HB9. Sure hope that the 7X doesn't give up and go away, but if I call him now I'm taking a serious chance of angering him, and that's no good. The XE turns it back to the HB; I continue to be patient and see what transpires.

Soon, the XE signs clear, and the European pile-up starts again, with more stations calling furiously. I listen carefully for the 7X2, but hear his distinctive chirp only a couple times when the stronger European signals stop transmitting for a moment. Not much chance that the XE is going to hear the 7X out of that mob. I wait for the XE to come back.

I keep waiting, but the XE does not show. I listen a bit longer; the pile-up starts to taper off, as it becomes apparent that he is not coming back. As it thins out, I hear the 7X better, with less QRM on him. I set my transmit frequency a hair above the frequency of the Mexican station and wait; I hear the 7X call again. His call is longer this time; probably he's about to throw in the towel. He signs; I wait a counted out five seconds, and, with no sign of the Mexican station, I call him, giving him a brief one by two. (His call once, mine twice, as in "7X2BC DE W9KNI W9KNI AR")

I listen, I hear "KNI QRX QRX XE2MX DE 7X2BC 7X2BC 7X2BC AR" Hey hey! Maybe I've got him. At least he heard me. I listen, anxiously. There's someone calling the 7X, but it doesn't sound like the XE; no, it's a WA4 something. Gosh, hope I'm OK and that the WA4 doesn't upset my apple cart by getting the 7X2 mad. The WA4 signs. I wait, again holding my breath.

Yes! "W9KNI DE 7X2BC R..." Another new one! I start putting the happy details into the log book...

And so it goes. Now, consider for a moment. The above operating session was a very plausible one for a spring or summer evening, and two good QSO's were made – without benefit of packet or "tuning for the pile-up." Not only that, the operating session was fun! Listening is fun when you get good at it!

The important lesson here is, again, to listen, trying to let nothing get past you. Listen to every signal, strong and weak, and try to identify the country it comes from, and who the QSO is with. Dig deep for the weak signals; even though you don't have the best signal on the band, experience will prove to you that many DX stations hear better than their transmitted signal would suggest. Remember too, that even if your signal going back to them is weak, their recognition factor of their own call coming back to them is very strong, and they will try to drag your signal out of the mud. Especially if you are the only one calling!

We will further discuss listening in later chapters, but you should be off to a good start now. Good hunting!

3

Basic Equipment Needs for DX'ing

Amateur radio today is certainly an equipment-oriented hobby, much like photography, micro-computers or audio. What amateur wouldn't like to own the latest new transceiver with all the bells and whistles? If you can afford one, and find one you like, by all means buy it. But the purpose of this chapter is two-fold: to help the budding DX'er identify the type of equipment he should have, and more importantly to get across the idea that one need NOT own the finest and most expensive equipment available to be a successful DX'er.

Permit me to demonstrate this further by comparison to a very common situation in amateur photography. Jack really enjoys photography, and wants to take great pictures like those of George, whose skill he admires. He sees that George takes his great pictures using a Super-Whizz-Bang Gargleflex with a 37.5 to 98.6mm turbo-zoom Coketar lens, and 43 filters. So, Jack saves up and buys, at considerable expense, a Super-Whiz-Bang Gargleflex, the referenced Coketar lens and the 43 filters. (Jack has always admired Sam's pictures as well, but considers Sam's success a matter of luck or some similar aberration, since Sam uses a very old non-automatic camera.)

But, if anything, Jack's pictures with the Gargleflex are worse than they were before using his old camera. Jack is very disappointed, but soon notices that Pete takes really superb pictures using a Kablamoblitz 80 with a selection of fixed focal length

Accublah lenses. Sure enough, Jack is last seen getting quotes on the trade in of his Super-Whizz-Bang for a Kablamoblitz. And, his pictures will probably be worse yet, not to mention his bank account.

In the mean time, Sam continues to take great pictures with his very old non-automatic camera.

Some photographers are natural successes at it; others have to learn. And it can be learned, and for a whole lot less than the price of a Super Kablamoflex. I trust the parallel is obvious; don't go refit the shack just because you are not working DX. It is unlikely to help. Instead, figure out what you need to change in your operating habits so that you will become an effective DX'er. A proficient DX'er can and will work DX with two watts to a random wire. So can you.

The basic setup needed to become a DX'er is simple – for most, a plain vanilla 100 watt transceiver and a good trap-free vertical such as a Butternut, or dipoles for the DX bands, plus paddle, keyer, mike and headphones are all that are needed to get you on your way. It is certainly possible to achieve the DXCC Honor Roll with such a set-up, and many have done it.

In the prior editions of this book the author took pains to help you determine what qualifications an HF rig had to have to be useful to the budding DX'er. These days that really is no longer necessary. Almost any transceiver built since the late 80's has everything you need, and so do many rigs built before then. None the less, here in a nut shell is what to look for if you are seeking a new - at least for you - rig.

If you are thinking of buying an older rig, make sure it covers all the bands below 30 mHz, make sure it has two VFO's (or the equivalent digital capability to operate with two different frequencies on the same band, usually labeled "A" and "B"), and make sure that it has provision for CW zero-beating, or "netting". Most but not all older rigs do. The CW zero-beating capability may require that you disable the transmitter and tap your paddle to hear the side tone, which is also your spotting tone, but that is acceptable if not ideal.

Effective CW operation will also require that the rig either has good CW filters already installed or at least that it has provision to accept them and that they remain available.

There are two other things that are important – confirm that the keyed CW output is of good quality, and that the front end of the receiver portion of the rig is up to par.

Both of these items are important. Clean CW unquestionably gets through the pile-ups and QRM better than a rig with truncated or extended CW elements, yet sadly, some rigs of quite recent design are guilty of this.

A receiver with a really good front end is inherently quieter than one lacking in such things, and is a pleasure to tune a band with. And in contest situations, rich hunting grounds for the DX'er, a solid front end is an absolute necessity. In brief, you want a receiver section with good sensitivity, and superb rejection of strong signals near the operating frequency and freedom from overload. If you don't know much about understanding receiver specifications, ample resources to get you up to speed in an evening or two are available particularly from the ARRL, from their excellent publications and on their web site.

For CW, while not absolutely necessary, QSK (break-in) is a nice feature.

The above requirements are not particularly difficult to find in a piece of used gear – there are many different models of transceivers offered that fully meet these requirements.

If you have not been a student of the design features of the various HF transceivers, not to worry. Every significant modern transceiver has been authoritatively reviewed in QST Magazine, and the reviews are available on line for members. Whether you are buying a new rig or a used one, these reviews are an invaluable resource before purchase.

The available service for a rig should be a consideration as well. Most modern rigs are beyond the capabilities of most amateurs to effect anything but the simplest of repairs. Ideally of course, you will never have any troubles – and the reliability of modern equipment is so high that it is reasonable to hope to never have a problem, especially if you treat your equipment with even modest respect.

But if it does need repair, it is worth inquiring how good – and how expensive – service for the rig would be. This is not particularly easy to find out. But if you are buying a used rig, try calling the manufacturer's service department. Be honest – tell them you are looking to buy a used rig of their manufacture, and ask if service remains available for the rig in question, and if it is expected to continue to be in the foreseeable future, and if there are any problems that you should watch out for in a pre-purchase inspection. You can even ask if they recommend that particular radio – service people are not sales people, and thus less likely to gild the lily, and you may get a surprising answer.

The above approach may sound silly to you, but you should know your author once was fortunate to avoid the purchase of a solid state amplifier because the service department for the manufacturer told him in no uncertain terms that RF output transistors were no longer available on any basis for that particular unit, that alleged substitute transistors would last only for a few hours, and on that basis they very much recommended against the purchase. The seller of the rig admitted that the final transistors were bad and had discounted the price, saying that the alleged substitute transistors would work fine.

A resource for comments on equipment and on service for the equipment is available at www.eham.org in their review section; check both for the actual rig under consideration and also under "service."

Besides the usual resources for used gear, a good place to start looking for a used radio is your local club. There is a real good chance a club member has a rig available and probably for a slightly better than normal price too. And, you can check to see if the seller has a good reputation in the club. Most people in a club won't try to dump a problem radio on a fellow they will be seeing again month after month.

Another approach to equipment is to build your own, probably from a kit. If you have a little technical skill: the ability to solder well, and the ability to follow directions, and if you know how to use a multimeter then you have the skills necessary to build your own rig from a kit. (And in any case if you don't have these skills, you should make a point of working to acquire them. There are too many times that a simple soldering job will keep you on the air and will save you a lot of time, bother and money.) If this approach is attractive to you, there is at least one manufacturer offering a high quality full featured rig that you can build and is in every way capable of getting you to the top of the Honor Roll.

There is one other significant advantage to a rig built from a kit – they are relatively easy to repair by the builder, should they need it, and kit manufacturers generally have particularly robust service available.

Regarding a transceiver, the bottom line is that if you can't afford the top of the line rigs, do not despair! The basic features listed above are pretty much required. But all the bells and whistles beyond the basics, while nice, are not crucial to DX success. If you can afford the latest and greatest and want to do so, go for it. If you must settle for more modest equipment, don't feel bad, or jealous - you can and will compete.

The biggest question most fledging DXer's must meet as they are assembling a station is how additional funds should be allocated after purchase of the basic equipment. Of course, a number of accessories will be required, such as headphones, a CW filter, a keyer and paddle etc, and these items are treated in other sections of this book.

Most DX'ers, if they can afford it, try to keep back up equipment available. Often, the back up is an older piece of gear that has been replaced by a newer model.

Once these matters are in hand, the classic argument is whether a linear amplifier or a directional gain antenna should be next on the list.

Conventional wisdom favors the improved antenna, and in most cases that is certainly the correct decision; the gain antenna will help your signal nearly as much as a linear will, with reduced chance of RFI, and will help greatly in hearing the DX stations on the bands for which the antenna is intended.

If, however, the prime goal of the DX'er is, for example, the attainment of the Five Band DXCC award, he would likely be better off buying the linear. It will be a lot easier to work one hundred countries on the higher bands using simple antennas and full legal power than it will be to get the hundred on eighty meters barefoot, with an idle twenty meter array outside!

Antennas will be considered as a separate subject later in this book, as will accessories useful to the DX'er. If you are on the edge of purchasing something, skip ahead and take a look; otherwise we'll get there in due course!

4

Basic Operating Techniques

There are several points, techniques and procedures referenced in the preceding text that the newer operator will likely not understand fully. This chapter seeks to clear up a few of these points. Equally, more experienced operators might just want to take a peek through here to insure that we are on the same page.

The first point is the term widely used by DX'ers called "zero-beating," or "netting," one of the most important tools of the effective CW DX'er. Most simply put, zero-beating means to place your transmit frequency precisely on the same frequency as that of another station, the one you are zero-beating. It does NOT necessarily mean that you tune your radio so that the audio note of a particular station goes to zero hertz, although that is an acceptable, if crude, way of zero-beating another station. It does mean, generally, precisely matching a spotting tone generated by your transceiver with the tone of the received station.

Whenever you are zeroing another station, you must be sure that the RIT and XIT are off, unless you intentionally are using one or the other. And, if your rig has passband tuning you must be sure you are tuned to the correct passband. Most modern rigs make it pretty obvious where you should have your passband set for CW operation. Some equipment gives you no option; when you are in the CW receive mode, the passband tuning is set in such a way you cannot err. But many transceivers feature passband tuning, allowing the bandwidth of the IF crystal filter to be swept across the center BFO frequency. And you soon learn that the passband tuning must be set on one side of zero to copy upper sideband SSB, and on the other side for lower sideband SSB reception.

Passband tuning can be a valuable feature in a transceiver, making crystal filters far more effective when the going gets tough, but improperly used, passband tuning can lead to major errors in terms of zero-beating. If you are not sure of how to use the passband tuning, disable it while zeroing another station.

OK, you have just found 5R8AL calling CQ on 14018.4 kHz. A new one – and not spotted yet on packet – you have a shot at a clear call! Touch the spotting button on your transceiver, or do whatever you need to do to get the spotting note. (You may even have to turn off the transmit switch for a moment and key your paddle, so that you can hear the sidetone in the radio even though no signal is going out.)

Listen to your spotting tone or CW monitor note. OK, the note's frequency is a bit higher than the 5R8's. Move the knob a little so that your keying tone or spotting one is identical in frequency to his. There – got it. Good. OK... there. He finished his CQ. Call him. Yes! You got him!

A quick and accurate CW zero beating capability – and the knowledge of how to use it - is absolutely essential for any CW oriented DX'er.

Should your transceiver have an RIT control, note that it is very important that you vary the transceiver frequency for this type of zero-beating by tuning the main dial, NOT the RIT control. RIT MUST be disabled when you are zeroing a station if you are using a transceiver. After the station is zeroed, the RIT may again be used, but remember to always disable it whenever you are zeroing or netting a station.

Truthfully, the author is not a fan of RIT and XIT controls for chasing DX. They offer a lot more opportunity for mischief than they do for help. They can be very useful for the DX station to tune through the callers after him, but for chasing DX they are mostly more of a bother than they are a help.

Modern digital transceivers generally have two VFO's and offer an "A=B" or a "Synch" button, though possibly they use different names for this control. Once you have zeroed a desired station, press the synch button, so that both the "A" frequency and the "B" frequency are identical. You can then put the rig into "split" mode, so that the rig transmits on one VFO and receives on the other. Now, with both "A" and "B" vfo's synched together, you can tune the receiver without fear of moving the transmitter frequency fron the station you have zero'd.

If you have any question about zero beating, be sure to resolve it as quickly as possible, and before going farther in this text. Going after DX on CW without the proven ability to zero-beat is sure to lead to considerable frustration and lost opportunities. If possible, get some friends to help you on the air. Have one transmit, and attempt to zero beat his signal. Have the second friend report on how close you are to the first station's frequency. Or, use a friend who has a separate transmitter - receiver combination. Simply get into QSO with him on the air, and zero-beat him using the above referenced techniques. Then ask him how close you are. He will be able to tell you very accurately, as long as he understands what you are trying to do, and understands that you wish a totally honest answer. In fact, all transceiver owners should run this test occasionally, and especially when you have a feeling you aren't getting QSO's you should be.

Another area that may elude the new DX'er is the field of beam headings. If you own a rotatable antenna such as a Yagi or a Quad, do you wonder which direction to aim your antenna to work a certain DX country? Which direction is correct for India, or for the Cocos-Keeling islands, off the coast of Australia?

The answers to these questions are the great circle bearings for your location to those places. You probably covered great circle routes in school. Do you remember the class where your teacher drew a piece of string across a globe from one location to another on the globe, and demonstrated that the string represented the shortest path between the two points? If you don't remember, try it for yourself now. For example, run a piece of string from Chicago to London. Note that the compass direction at any point on the string is different from that a little further along on the string.

Radio signals are like the string; (with exceptions to be discussed) they seek the shortest line between points. You will note that the string connecting Chicago to London on your globe departs Chicago in a north-east direction; that, then, is the correct bearing to aim your antenna if you are in Chicago and wish to QSO London on the short path.

There is a special type of map that is designed to aid you in this; it is called an alti-azimuthal projection map, or, more simply, a great circle map. These maps have two virtues that are of great assistance to the DX'er. The important one is that they show the correct great circle bearing from the center of the map to any point on the globe, and also the correct and undistorted distance.

Such maps in wall sized format are available for American DX'ers from the American Radio Relay League. (And of course the League would sell one to anyone anywhere else, but the rendition of the map is such that it is only accurate for American amateurs. Great circle maps suitable for amateurs of other countries are generally available through their national radio society.

Smaller maps are available from several sources, and it is easily possible to get a computer-generated map that is actually created for your exact location, anywhere on the globe, or to obtain a computer program that will print one out on your own computer. If you have a directional antenna, a great circle map should be in easy view from your operating position. Once you get used to locating countries on them, they are very easy to use. Simply find on the map the location you are trying to work, note the direction it lies in from the center of the map, point your antenna in that direction, and you will be on the correct bearing for the short path to that country.

You will notice that the above sentence references the short path. For every short path bearing, there is also a correct long path bearing. But, since radio signals always seek the shortest path, how can there be a long path?

To answer this, consider what happens when we point our antenna and transmit in any given direction. If the band is open and conditions are good, our transmitted signal keeps going on and on until it reaches a point at exactly the opposite side of the globe. What happens then? Do the signals drop off the edge there, or head for outer space suddenly? No, of course not. They simply continue on, going on in the same direction, though they are now more than half way around the world. Once past the point on the opposite side of the globe from the transmitter, the signals are considered to be "long path" signals. By pointing your antenna in the opposite direction, you can hear - and work - stations via long path. Often some of the finest DX'ing is done via long path.

An excellent example of this from the States is working into the Mid-East from the midwest or west coast. In these locations, on winter mornings, for twenty meters, the most reliable path into the Mid-East is the long path, with our antennas aimed into the southwest. The signal goes out across the central and southwest Pacific, then continuing on a great circle bearing into the Indian Ocean and on into the Middle-east, having come perhaps seventeen thousand miles. Yet, in winter, this is the most reliable path, more so than the typical short path bearing that would seem to make more sense.

Another reliable long path in winter is the east coast openings into Japan on 40 meters. There are many others, on bands from 80 meters through 10 meters.

Long path propagation is learned mostly by experience; but any time that you hear a big pile-up on a rare one, and you are having trouble finding or copying the station, if you have the capability, don't be afraid to rotate your antenna 180 degrees for a look. You may get a pleasant surprise. And that is how you attain the long path bearing; take the short path bearing, and add, or subtract, 180 degrees, as appropriate.

There is one other significant exception to the short path bearing rule, which is called crooked path. It will be discussed further in the chapter on propagation. But if you are in Chicago, and hear a TL8 calling CQ 40 dB over S-9, peaking from dead south, what you are hearing is not crooked-path propagation. Rather, what you are hearing is a phony!

5

Basic Pile-Up Technique

I had finished dinner and was reading the paper when the phone rang. My daughter answered it, and called me. "You'd better hurry, Dad. He says it's about a new country."

I was at the phone in a flash. A voice intoned in deliberate manner, "Vee Kay Nine Yankee Tango, fourteen oh two three, short path. OK?" I recognized my buddy Jim, N6RJ, who had moved from Chicago to southern California years ago. We used to work for the same company, and both of us are devoted DX hunters. We share need lists and intelligence on new ones.

"Right. Has he been spotted yet?"

"On packet? Not yet."

"OK, thanks, Jim. Fourteen–oh-twenty three." I hang up and race down the stairs.

Within moments, I have the antenna swinging to the northwest, the short path bearing for the Cocos-Keeling islands, one of the rare ones I really need. My "DX'ers Tout Sheet" said nothing about any VK9Y/Cocos activity; I wonder where he came from, or if he's real. In any case, even as I muse, I'm getting everything going; work them first and worry later, as the old Bard taught me.

Transceiver on, linear on, headphones on, antenna coming around OK, bandswitch to twenty, amplifier knobs preset, transceiver moved to 14,023. I listen eagerly, wondering whether we are going to have the same propagation the west coast is having; perhaps they have a lock on the fellow. But if that were the case, Jim would have told me before he hung up; he must figure I have a real chance.

OK, let's see what's what on the frequency. There, I find him almost instantly, "QSL VIA VK6RU OK 73 ES GL PETE AR N5TP DE VK9YT SK". OK, not too fast, not too strong; a good S-5, though, solid copy. Yes, he should be workable.

As I listen, I zero the VK9. I wait; yes, there's N5TP back to him. Hmmm. N5TP is about 400 hertz above the VK9; quickly I move up and zero on N5TP; after all, that's where the VK9 is listening. I adjust the keyer speed to approximate the speeds of the VK9 and the N5 station. "...R FB PAUL QSL VIA VK6RU FOR SURE 73 DE N5TP SK" I poise ready, waiting just a moment before I begin my call to see if there is any competition.

Hah. I should be so lucky. I hear eight or ten stations growling their calls out on the frequency, calling the VK9. A disciplined group as well; none of them called until N5TP was finished, indicating better than average courtesy and patience. It also suggests they all are reading him pretty well. Two or three of the stations seem to be dead on N5TP's transmit frequency; I decide I'd better move my transmit frequency up a couple hundred more hertz and try to get clear of those fellows.

That brief pause before I start calling has turned out to be consistently one of my better tricks; it gives me a quick peek at the competition; and a chance to react when I don't like the look of the cards I got dealt. I start my call. Lemeseehere... That fellow wasn't exactly setting the world on fire with his speed; must be a fairly new operator, and he's not just passing out reports; best give him three times to copy my call. Yeah, OK, let's see how I did. I open up the receiver.

Oops, he's already back to someone; he's already giving a report. That means he picked up the other fellow, whoever he is, on a one time or a two time call at the most, while I was giving my call three times.

So much for that theory. Well, let's see who he is in QSO with; then I can learn some more. OK, he's working WØSR. Where's SR? Yes, I hear him on backscatter; OK, about 200 hertz above me. Well, at least I moved in the right direction. Hmm. Think I'll set up shop about 300 hertz above the WØ. The VK9 seems to be listening higher after each QSO...

OK, WØSR is signing clear. Ready, set... Let's wait a second again, and see what's happening. Yes, there's quite a bunch calling him now. My frequency seems fairly clear. WØSR was going a bit faster than I was; I ease my keyer speed up a bit, and stroke my call out on the gleaming Bencher paddle. OK, that's enough, open the receiver and let's see what we hath wrought.

Ah, he's coming back, "WØVX DE VK9YT R TNX..." Darn! Another Zero. OK, the VK9 is turning it back; let's have a look-see for where the WØ is, and see how close we were to WØVX when we called the VK9.

Yes, there he is, on backscatter. Hah; he's almost dead zero on the frequency I called on. Ohkay, let's set up about three hundred hertz above WØVX. Hope I manage to pull this one off pretty soon; the pile-up seems to be getting larger fast, and no wonder; a VK9Y isn't just your ordinary pretty face. I glance at the packet screen – there he is, called in by two different stations.

...OK, the VK9 has signed with WØVX, and VX is starting his last transmission. Discipline is starting to break down; several stations are calling the VK9 on his frequency, ignoring the fact that the VK9 is working a station nearly a kilohertz higher in frequency. OK, VX is clear; I pause a second. Again, the frequency I have chosen to call on seems almost clear, but I can hear a real zoo starting up at the edge of my audio passband, below my frequency, down close to the VK9's transmit frequency. I start my call; I don't need to adjust my keyer this time; ØVX was going almost exactly the same speed that I was. I finish my call, and listen carefully.

The QRM on the VK9's frequency is terrible now, and at first there is no way I can copy him. I can't even tell if he is transmitting for sure, though I think I hear his signal in there. I wait; yes, he definitely is transmitting, "QTH HR COCOS ISLAND COCOS..." Yup, someone's got him. There has to be at least a chance it's me. My call seemed to have been timed about right. "...PAUL QSL VK6RU VK6RU HW CPY W9KNI DE VK9YT AR KN".

All-right!!!! I got him! Wow! "R VK9YT DE W9KNI R GE PAUL ES TNX FOR QSO ES NEW COUNTRY UR RST 569 569 HR NR CHICAGO CHICAGO ES NAME BOB BOB QSL SURE HW CPY? VK9YT DE W9KNI AR KN". I listen with bated breath. Yes, "R W9KNI DE VK9YT..." OK, check the clock before I forget, and get the time in the log right. Too often in the excitement of things I have forgotten to enter the log time, and had to take a wild guess at it later. I've since learned to always log in the starting time right away.

"...FIRST DAY QRV FROM HR WILL BE QRV 4 DAYS 4 DAYS OK BOB NOT KEEP U 73 ES GD LUCK QSL OK W9KNI DE VK9YT SK".

"R FB PAUL U WILL BE VERY POPULAR HI HI TNX VY MUCH AGN 73 ES GD LUCK AR VK9YT 73 DE W9KNI SK". I feel elated and drained at the same moment. Wow! A rare new country!

I finish the log entry, and go back to listen to the pile-up. Wow, what a zoo. I hear several locals in the pile-up, calling desperately. But for me, I happily fill in the log data, verifying that I have the proper date in UCT time, being as it is a day later than local time. I never did get my RST, but no matter. An exchange of signal reports, contrary to popular opinion, is not a necessary part of a QSO. I'll read it off the QSL when it comes.

I dial my friend Jim and fervently thank him. We chat for a few minutes; then he gets the dinner call and we hang up.

Pile-ups can provide some of the most exciting moments in amateur radio; few things in life will ever be sweeter than hearing your own call sign coming back out of a horde of stations desperately calling the prey; especially when it's an all time new country. But, clearly, when hundreds of stations are calling a rare one, and only a few are going to make it through, a pile-up equally is guaranteed to end as a failure and a frustration for the bulk of the people in the pile-up.

The observant student DX'er will discover that certain stations always seem to be able to get through the pile-ups easier and more quickly than the rest, be it in a contest or otherwise. And, as often as not, the successful stations do NOT have the loudest signals on the band. There are definitely tricks to the trade, and many of them will be taught and explained here.

But not all! There are techniques that can only work once in a given situation, and cannot be used again. Since the author hopes that a number of amateurs will be reading this book, they are best left unpublished. If you learn the methodology of this book, you will learn them for yourself one day; but in the meantime don't even ask! Also, there are tricks which are patently dishonest, and there will be no further mention of such here.

The best and most reliable approach to any pile-up is to already be in the log of the rare DX station! This statement seems trite, obvious and simplistic; yet it is the point of much of the earlier pages of this book. Pile-ups usually start when lots of people hear a DX station being worked by a loud near-by station, or by a packet spot racing around the world. But remember, the DX station got his first QSO of the operating session by calling CQ, or perhaps calling some one else calling CQ or ending a QSO.

Also, it is very obvious upon reflection that your best chance of working a new one is when you are the only one calling him. Your next best chance, all things being equal of course, is when there is only yourself and one other station calling him, etc., etc.

Being the only station to respond to a QRZ or CQ of a rare station is far and away the best shot, however, since with no one else calling you don't have to worry about some potential competitor having a propagation advantage over you. W9's and WØ's will especially understand this! But to get into this happy situation you have to find the DX station. How? By careful tuning! Careful tuning is always the best way to work the new one, rather than taking your chances in a pile-up.

But, pile-ups remain a fact of life for the DX'er. You can't be everywhere on the bands at once, and you doubtless have other duties which must be discharged in your day to day life. And, when there is a pile-up for one you need, you have to play the game.

One of the curious aspects of pile-ups for the skillful DX'er is that the better the operator at the other end the more difficult it can be to work him quickly.

Fortunately, the corollary is that the better operator is the surer to work everyone.) This sounds inconsistent, but there are reasons. The really skillful operator at the other end is consistent enough in his style of operating that everyone quickly learns his operating pattern, and many stations, rather than a select few, will be calling him where he is listening. The many stations calling mean that you are less likely to outsmart the competition, so you are stuck in there with everyone else.

There is one particular variation of that theme: the operator whose operating procedure is so completely random that it is virtually impossible to guess where he will be listening for his next QSO. Unless you get lucky, either operating pattern can make for a long night. Fortunately, this situation generally occurs on planned DX'peditions, and you can be reasonably sure that sooner or later you will prevail. Even if it is not a DX'pedition situation, you can keep hope; good operators have only gotten that way by being active, and good operators usually manage to work everyone that wants them eventually.

Most operators, and this certainly includes most DX stations, operate in some reasonably consistent pattern. The key to cracking a pile-up is to discover this pattern, and to adjust your transmit frequency and timing accordingly. Whenever you encounter a pile-up situation over a rare new one you need, you want to get your QSO as early as possible. Pileups, especially on non-contest weekends, have a rather nasty habit of growing enormously in a very few minutes in this age of packet nets and cheap long distance calls.

There are several quick questions which must be answered when you start chasing a new one in a pile-up situation. Where is the station listening? Is he accepting tail-end calls? Does he move his receive frequency after every QSO? How long does he take to pick up a call? How fast (on CW) are the stations he works? The answers to these questions help you optimize your strategy for the situation.

Another aspect of a pile-up is to understand that pile-ups tend to be very fluid, dynamic situations, where the rules keep changing, as determined by the final arbiter, the DX station. And never forget, he has two penalties that he can impose, one individual, one collective. He can refuse to work you if you annoy him with your tactics, (or even worse - work you but NOT log you) or he can turn the rig off if too many people offend him.

In a dynamic situation where you have to keep moving, remember that there is no guarantee of success, ever. But, as things develop, if you keep your calls to the right length, and consistently are calling on a frequency near that of the successful station, you are bound to get the QSO if the band and the DX station's patience hold up.

When you encounter a pile-up by tuning, often the first problem you must face is to determine who everyone is calling, and where that station is transmitting.

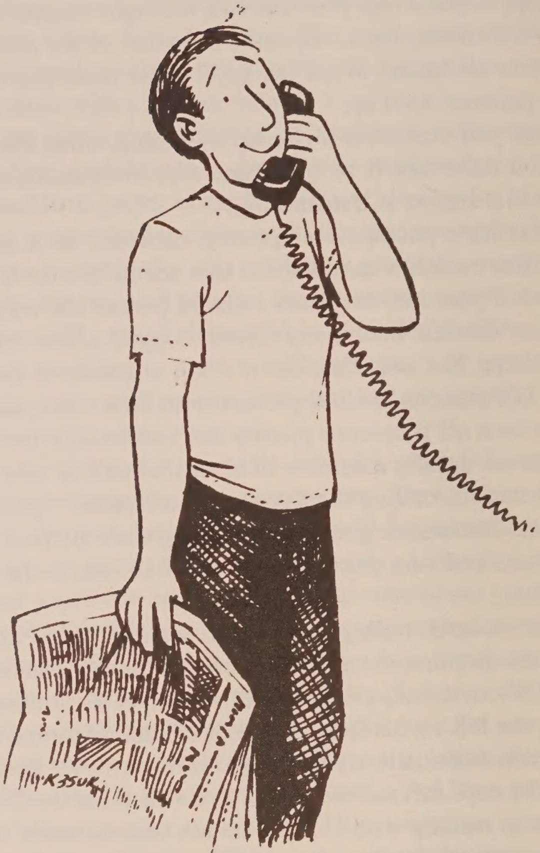
If you have packet or a spotting network, do a quick check there. But even if a call is listed that seems to match, ALWAYS confirm it yourself. Incorrect calls on packet are very common, and one wonders how many fellows logged a new one that was never there. Not only that, but it is not unknown to find two different DX stations in close proximity to each other, each managing his own off frequency pile-up and confusing a lot of DX'ers.

There are usually a number of clues that will be very helpful. If all the stations calling the DX station are rather tightly bunched together, chances are good he is working stations close to his own frequency, and very possibly you will find him in the middle of the mess.

If the stations calling are spread out over three kilohertz or more, that is generally an indication that the DX station is listening off his own frequency. Usually, some of the stations will be calling the DX on his frequency as well, accompanied by several policemen frantically trying to get them to move. In such cases the traffic cops themselves are the best beacon of the DX station's frequency, usually with the DX station unfortunately dead zerobeat beneath the loudest of the traffic cops!

Most DX stations listening off of their own frequency listen higher than their transmit frequency, so you should listen below the pile-up first in hopes of finding the DX station. While this rule is not infallible, it is correct the great majority of the time.

Often, finding the DX station and getting his call may be two different things, with many stations signing their calls once every four or five QSOs, or even less often. Sometimes you can get


K3SUK

lucky and find someone working the DX station and actually giving the call of the rare one. You might even find someone using the DX station's call while calling him. And, sometimes, finding the DX station can be made more difficult, especially when you lack his call sign, because you don't know what path to turn your antenna to while you look for the DX station.

Here, a bit of knowledge of propagation can be rather helpful. You should point your antenna, if it is rotatable, towards the best open path the band is carrying. If you have been carefully tuning the band before finding the pile-up, you have a pretty good idea what paths are open, and can check each of the likely ones.

Sometimes, it is worth switching to a simple antenna, such as a multiband vertical that is omni-directional until you have found and identified the DX station. This is especially true when the pile-up is huge, indicating a likelihood that the DX station has a decent signal, which will make finding him on the vertical easier. Once you have his call you can turn the directional antenna on him, if you are so blessed.

And, of course, once you find out who the DX station is, you will often find that you have already worked the country. You may even occasionally find that the subject of the pile-up is a goody that you worked an hour before on his CQ, and now you spend twenty minutes trying to identify what all the excitement is about!

Having found the DX station, and recognizing that you need him, or while you wait for him to sign his call to see if you need him, you should be looking for the stations he is working and trying to learn his operating pattern. Then, you can be ready to call once you have identified him.

Here is a very important and basic truth about DX'ing: The frequency the DX station operator is listening to is the transmit frequency of the station he is in QSO with.

This sounds absurdly simple. It is. But equally, somehow it is the link that a lot of would be DX'ers miss when they enter a pile-up. It is fundamental to the whole idea of being a successful DX'er. You can't and won't work a DX station if you don't call where he is listening.

Of course, the DX station may well be listening on his own frequency. But if has many callers, he almost always will go split.

This being the case, remember the call of the station the DX operator is working, then, while still listening to the DX station, press the synch button (or the A=B button) on your transceiver, or switch to the outboard VFO if that is what you have, then quickly tune the second VFO to where you think the DX station might be listening. This will usually be higher in frequency, and usually in or above the pile-up. What you need to do is find the station the DX operator is in QSO with. If you have listened for a minute or so, you know roughly how long it is taking the DX station for each transmission, so you have a pretty good idea of how much time you have to look for the station he is working before you switch back to the DX station's frequency to pick up the call of the next station he is QSO'ing. When you find the station the DX is working, you have found the frequency that the DX station is listening to.

Sometimes it may be several QSO's before you find the station the DX is working, and there are times when you never have much luck looking, due to poor backscatter, very wide frequency splits, etc. But you must do the best that you can at this; even the occasional spotting of a station the DX is working gives you more insight about what is really happening than you will get any other way.

In any case, once you have found the station in QSO with the DX, try moving your transmit frequency dead onto that station's frequency for a call when the QSO is finished. The reason you call exactly on the other station's frequency is because the majority of DX'ers seem incapable of accurately zero beating a frequency, making chances good that frequency will be fairly clear of QRM. Also, that frequency is an especially valuable one for the moment, in that the DX station is (or at least was) provably listening to it. However, this strategy is strictly a short term one, until you come up with a more complete strategy based on your observations of the DX station's actions.

You are now prepared to make your first call when the DX station has finished his current QSO. But, you must be very careful to keep your call short enough that you hear the DX station give out the call of the next station that he works. With luck, it may well be you! Failing to be so lucky, however, it is very important that you find the next station the DX works, and see how much, and in which direction, his transmit frequency varies from your own.

So, you called, and the DX station came back to another station. Find that other station. Is his frequency up 300 hertz from yours? If so, that is a strong suggestion that the DX station is listening up higher around 300 hertz after each QSO, so you should move your transmit frequency to be 300 hertz above the current station in QSO. If you fail to work the DX again, see what has happened after the next QSO.

Now, you begin a pattern of calling, then listening, and, when the DX comes back to another station, see where the other station is in terms of frequency, figuring out the the DX operator's pattern. Perhaps the DX station moved up 300 hertz again, and worked someone you were almost exactly dead zero with. OK, so you were out-gunned; move up 300 hertz again, and try again. Perhaps the DX station didn't move at all. That would suggest that he moves the receiver only if QRM gets too fierce on the last listening frequency. Your tactic then is to zero the last station, and pause a brief second before calling, listening on your transmit frequency. If you are pretty well in the clear, stay where you are. If there are a number of stations calling on your transmit frequency, quickly move up about 300 hertz, and make your call there.

Does the DX station move his receiver up 300 hertz after each QSO? Or up 300 hertz twice, then down a kilohertz, then back up again? A common ploy of DX stations that keep moving their receivers higher up the band is that after a certain amount of stepping higher, they move back down to a frequency near their transmit frequency, and start the whole cycle again, moving higher with each QSO. This is especially true of DX stations who only have an RIT facility for listening off frequency, rather than an outboard VFO or separate receiver. (Remember, a lot of DX stations have older equipment with limitations modern rigs do not have.) Where you run into this situation, get some idea of what the DX station's high frequency limit is, and start your calls down at the other end of the DX operator's when his listening frequency approaches the high end of his receiving range.

An unusual technique used by a few DX stations is to maintain two pile-ups at the same time, one above their transmit frequency, and one below! In most cases, the DX'ers in one pile-up are not aware at all that there is a second one, especially the lower one. Almost invariably, the lower one is smaller. But, if the DX station is switching back and forth, you must switch as well with your calls, though your chances of success are almost always better in the lower one, but obviously only when he is listening there.

Virtually every DX station has some sort of pattern, a pattern designed to help him find a station to work who is not being obliterated by QRM from other callers. Learning that pattern is the key to success in a pile-up, and the quicker you comprehend it the faster you will get your QSO.

Every QSO the DX station makes while you are chasing him should give you more information on his pattern, sharpening your perception of it, and enabling you to more accurately place and time your calls. And that is your goal - to be the station in the path of the DX station's tuning, calling on a frequency clear enough that he can copy your call. When you get into the situation where each call you make is just about dead on the frequency of the successful station out of a pile-up, it should only be a matter of time before you are in the log, even though your signal may be many dB down from some of the big boys.

And, even if your quest for a particular rare one in a pile-up situation ends unsuccessfully, due to propagation failure or the DX station going off the air, what you have learned about his operating habits and patterns will very likely prove of value later - after all, you may be in a pile-up again for him tomorrow, and advance knowledge of his operating pattern will be a major asset.

A last tip – often spotting nets will give tips on a DX station’s moves – like "QSX up 5" meaning the spotter worked the DX by calling him up 5 kilohertz. But remember – pileups are very fluid and dynamic – in three or four minutes the situation may have changed dramatically. When you see such a tip check it out but don’t forget what you have been learning about the DX station on your own.

Author’s note: Further references in this book to "spotting nets" and "packet nets", and "spots" and "packet" will be used interchangeably. Some DX’ers get their spots on VHF packet radio; others through various Internet and Telnet sources – but in virtually all cases the actual spots are the same.

6

Intermediate Listening

By now you have undoubtedly started testing the techniques learned so far from this book, and have begun listening to the bands in a more intensive manner. And, hopefully, you have already put a few new ones in the log. You have also learned that intensive tuning is pretty slow going. Now, we are going to try to learn how to tune faster and more effectively, yet with little risk of missing anything important.

As you recall, the main objective of tuning is to not overlook a signal, often rather weak, from a new country, nor a QSO in which a louder local station is in contact with a new one. All of this translates into not letting a new country get by your ear. Fortunately, there are a number of clues to watch for that quickly will let the experienced operator skip over the bulk of the signals that he hears. And, there are a number of optimization procedures to practice in your tuning that can speed up your coverage of an open band.

Suppose, for example, that conditions really stink, and twenty meters is the only band open for DX. In conditions like that, the intensive tuning pattern we learned earlier is ideal, because most or all DX signals are going to be pretty weak. And in truth, if the band is open to an area where you need a few countries, poor conditions can actually be more favorable for you, because the DX stations are more likely to appear on the only open band. Further, potential competition is likely to be reduced, since many stateside operators will be discouraged by the poor conditions.

But let's take a look at the alternative, a day when conditions are superb, and three or even four DX bands are open, delivering good signals from far away places. Now, efficient tuning of the bands is essential, and a very slow pace of picking up each and every signal and having a careful look at it is more likely to be counter-productive. Clearly, a little more speed in covering each band would be helpful.

In light of these statements, you probably by now are wondering if all that stuff in the first chapter was bunk. Absolutely not. If you have acquired a habit of digging down into the noise and the QRM and dragging weak signals out to see where they're from on a regular basis, you already have gained a major tool for your DX'ing career. Now, we are going to sharpen that tool a bit further.

You will have noticed in your listening that DX signals often display characteristics that tend to identify them as DX. Since it is DX we are interested in, being able to recognize signals as being DX is a real plus. Once we have identified a signal as being from a DX station, we want to identify the call sign to see if it is one we need. So, always, when we are tuning, we try to identify every signal as being DX or not before we get a call sign.

Of course, on SSB, the accent of an operator is a dead give away that you are listening to an American, or to a DX station. Except that American operators are often sitting behind the mike at many a rare location. Again, some natives of other lands speak American English with a fluency that boggles the mind. Also, a very foreign sounding accent can be that of an operator settled into Los Angeles.

The CW operator lacks the benefit of an accent to help determine if a station is DX or not, and must use other clues in making the determination, clues which also benefit the SSB operator.

Some of these clues include polar flutter, auroral buzz, and subtle variations in frequency, very slight, due to Doppler shifts on multiple paths.

In some cases, tip-offs for the CW DX'er can include chirpy signals and hand sent CW, such signals often originating from those countries where modern gear and components are sparsely available at best, where power line regulation an impossible dream, and where getting a signal on the air at all, albeit chirpy, is a real feat.

In truth, we will never be able to guess correctly whether a station is DX or not one hundred percent of the time; there are too many quirks of propagation that can make a signal from one hundred miles away sound like rare DX for sure.

On the other hand, there are times when conditions are such that signals from half way round the world come screaming in as though the fellow at the other end is across town. But that, unfortunately, is rare.

Obviously, the ability to distinguish DX from local stations can be useful, and it is an ability that the successful DX'er learns, indeed must learn. As you tune, guess whether each station you hear is DX or not. With a little practice the experienced DX'er can accurately identify a signal as DX or not DX ninety to ninety-five percent of the time. As you get better at this, you are sharpening another tool, and becoming more skilled and efficient at tuning.

Earlier, you were told to listen to non-DX stations as well, to determine if they are in QSO with a rare station. And, no doubt, you found that to be extremely time consuming. It is. But there are a number of clues to watch for that you can use to help speed up making that determination, with only a small chance of missing a goody.

Let's study some of those clues here. On SSB it's almost a give away. The SSB operator, in QSO with a new one, will almost certainly make it obvious within a few seconds. "..Thanks, Jose, for the new country, my friend.." Not to mention the slow and deliberate speech used to speak to a DX station for whom English is a secondary language.

QSO's with rare DX stations, on SSB or CW, are almost always brief; with minimal contact information exchanged. This may be regrettable in human terms, but it is a fact of life; probably partly because the DX'er in QSO with the new one doesn't want to be hoggish, and partly because he's so excited he isn't capable of carrying on rational conversation.

Also, the rare DX station often feels some pressure to pass out a lot of contacts, so he tries to work as many people as he can in the time available, and often does not encourage ragchewing. This gives you two important clues. If the QSO is particularly sparse, like "R TNX 579 579 BK" it's time to take a careful look at the situation. Or, if the station that you are listening to is making a lot of silly mistakes, try to find out if there's a reason; like he's in QSO with A51PN and is about to go into catatonic shock.

Another clue, on CW, can be the CW speed being used. On twenty meters, for example, most Americans like to QSO at twenty words per minute and more, especially below about 14,030. Some of the DX stations, on the other hand, perhaps restricted to hand keys, or more limited in CW ability, will go slower. Thus, when you hear a W station going slowly and deliberately, there's a pretty good chance that he's into a QSO that he wants enough to slow down from his usual speed. Anytime you hear a slow fist outside the slow speed practice areas, give it a look.

Particularly, watch for hand sent CW – that is – someone using a hand key or even a bug rather than a paddle and keyer. The great majority of DX'ers are using modern keyers and paddles, while some of the rarer DX is still using mechanical CW equipment. One other point too – DX stations using hand keys or bugs seem to be spotted on packet rather less frequently; a clear sign that many operators won't expend the effort to copy CW that is less than perfect. Their loss, your gain.

Always watch for any mention of QSLs, with the exception of "QSL VIA BUREAU." If someone is saying, "QSL VIA K9AM" you'd best take notice, because K9AM is unlikely to be handling QSLs for a G station. The same is true when a station promises a QSL direct; it costs money, so there is probably a reason for it, like it's a new country for someone. Listen and see if it might be one for you too.

Context of a QSO can be helpful in other ways as well. If you hear someone saying that the temperature was 32 degrees

Celsius, and it's the dead of winter out your window, you'd best hang around to see where it's so hot. Again, if a fellow ragchewing with his buddy starts complaining about mongooses killing the chickens, you just might want to stick in there long enough to see where it is the mongeese might be living. If there's talk of going QRT and heading for the sack, and it's breakfast time at your shack, you might want to pause long enough to copy a call.

Clearly, if you come across stations dealing out signal reports at a high rate of speed, you stay for identification. If you hear three or four stations saying, "QSY QSY" or "UP 5 UP 5" or "LID LID" or similar terms of endearment, or suggesting improbable physical activities on SSB, it's best to wait it out to see what the excitement is all about, making sure your linear is tuned up for that frequency while you wait. And, of course, you'll often run into pile-ups. But that is another subject, and will be covered further later.

If you are listening to a loud station you are pretty sure is a non-DX station, and he's going along at a nice comfortable rate, ragchewing or sticking to a fairly standard format, and there is no clue to suggest otherwise, he probably is not working anything likely to interest you, and you can with reasonable safely move on rather than hanging around to catch a callsign. Once in a while you are going to be wrong, and it will hurt a little, but far more often you will be right, and ahead of the game overall.

Now, let's go over some techniques for those times when conditions are really good. Let's pretend that we are operating at W9KNI again. It's a crisp late October morning...

The sun must have come up just a few minutes before my alarm goes off. I groan, and swing my feet out of bed as I sit up, searching for the slippers. I get out of bed quickly so I can turn off the alarm, so as not to wake my sleeping wife more than necessary. After all, it is Saturday, and she shouldn't have to get up. She's not the crazy one. I slip on the heavy terry bathrobe that she made me for my birthday to keep me warm in the cold basement shack, and slip out of the bedroom.

I stop off in the kitchen to put the coffee on, and head for the basement to fire up the gear. It is cold in the shack; I open the furnace vent to get a little warm air the next time that the furnace runs, turn on the gear, and return to the kitchen for my coffee. Soon, I'm back, settled in front of the rig, headphones firmly in place.

I swing the antenna from the southwest, where I was having a last look at the western Pacific last night before I went to bed, to the north-east, and turn the bandswitch to ten meters. Yes, immediately I start to hear signals; the band must be open. I start moving up the band. Tuning ten meters is pretty easy much of the time; everyone you hear is either DX or someone QSO'ing DX. If conditions are any good, few local stations waste time working cross town or for that matter cross country.

Yes, the Europeans are in strong; listen to that YO3 for example, a nice clean S9. But it's unlikely I will find any Europeans I need; I'm more interested in the possibilities of something from the Middle-East, where there are several countries I need. Maybe a JY from Jordan, a 9K2 from Kuwait, perhaps the A45 that has been spotted a few times, usually when there is no propagation to the States. Maybe even the legendary YI1BGD, from Iraq. The band is probably open to the Indian Ocean islands as well, such as the 3B8s and the FRs, which I already have, and the 3B6s and 5R8s, which I don't.

Fifteen meters is probably almost as good as ten meters, with a possibility of some trans-polar DX as well, but trans-polar DX is generally the preserve of twenty meters. Not that I'd refuse to work a new one if found on ten or fifteen, but my chances of finding a new one from that bearing are better on twenty when the band is open over the pole. Anyhow, fifteen will be the band of choice later in the morning, when ten meters is losing out...

The dilemma for the morning path DX'er with good conditions is whether to shoot for the short path on ten and fifteen, or the long path on twenty. Long path on twenty will undoubtedly be almost as good into the Middle-East as ten is short path, at least for the eastern part of the States and the Midwest, but the competition will be tougher. Twenty long path, better for the West Coast anyhow, has the additional advantage of probably better propagation into the FT islands of the far south Indian ocean.

Unfortunately, the short path on ten into the Middle-East and the Indian Ocean and the long path on twenty into the same areas open up at the same time and fade out at the same time, so, depending on location, the DX'er has to pay his money and take his choice. But, again, if ten is wide open, more DX and more DX'ers will opt for ten meters, regardless of what twenty meters is like.

Probably the best ploy, all else being equal, is to work ten meters on the first morning of a weekend, if it is nicely open, and try twenty long path the following morning. Also, the long path might still be open on twenty the next day even if conditions are slightly disturbed, cutting more into ten meter propagation than it will into twenty.

Ten meters has an inherent trap that even relatively experienced DX'ers easily fall into. When the European signals are loud and strong, the DX'er looks past them, trying to find the rarer and more elusive Middle-East and Indian Ocean DX stations. But, after several hours the band closes to the Middle-East, as darkness encroaches in those areas and wipes out their propagation terminal, yet the European signals will remain strong for several hours after the Middle-East fades. The DX'er is fooled into thinking that the band is still open that far, since Middle-East stations are uncommon enough that he fails to notice their absence.

That is the time that the clever DX'er searching for the Middle-East has switched down to fifteen meters; with any luck the hordes are still mesmerized by S-9 DL's on ten while you are logging the 9K2 on fifteen. Later, when fifteen too has lost its path into the Middle-East (and the Europeans are still coming in strong on fifteen) the sharp DX'er goes back to ten for a brief look around for Central and Southern Africans on ten meters, then heads to twenty meters in hopes of an early afternoon opening short path into the Middle-East again.

Of course, as we started out saying above, we are making the presumption that we are located in the American Midwest on an October morning, and the above strategy applies to those circumstances. They may well bear no resemblance to the conditions at your QTH. But, similar situations do exist for every DX'er and every QTH, and the best way to resolve conflicting propagation strategies is through the use of the kind of logic worked out above.

There are several other considerations that deserve attention in deciding what one's best strategy is. For one, the DX'er should keep track of what countries he needs, of course, and this can affect his tuning plans. For example, if he has Europe and the Middle-East pretty well worked out, but is weak in the Africans and the Pacific, an entirely different strategy would be called for, dictated by your personal need list and propagation.

You would sleep in late Saturday mornings, having been up until the wee hours the night before tuning twenty for those areas. You would start again in the late morning to check ten and fifteen, for the Africans first, and then the Pacific a little later as the sun rises in those parts of the world.

Another aspect you will want to consider is what bands you are most effective on. If your antennas are definitely below average, you probably will do better to spend more of your time on ten and fifteen meters than you will on twenty, where the competition is tougher, and lower antennas less effective, comparatively speaking. And of course, careful tuning is all the more essential if your antennas are not as good, since you want to work all the harder for that one-on-one shot at a new country. But, even if your antennas are not so hot, spend some time on twenty. It still can be a very productive hunting ground for the DX'er with the less well endowed signal; it just takes more work and time.

There are other tricks of the trade as well. One is the day and date. Consider, for example, that in Islamic countries, Friday has the same status as Sunday does in those countries where Christianity is the dominant religion. So, even though some of the stations of the Middle-East are operated by Westerners, Friday is the day off, and the most likely time that some of the stations will be active during what would otherwise be working hours.

A useful book for serious DX'ers is an annual almanac, since they generally list the public holidays and the religious holidays of many countries, and the astute DX'er knows that his chances of finding a DX station on from a particular country are considerably enhanced on such days.

Another consideration, along the same lines, is time and date. For example, take a look at your world map pasted up over your station, and take note of the international date line out in the mid-

Pacific. As you know, stations west of that line are a day later in calendar date. So, what is Friday evening for us is Saturday afternoon for them, and they may well be active, celebrating their weekend by waiting for you to answer their CQ's. Thus, Friday evening is a great time to hunt for those lads. Sunday evening, on the other hand, clearly is not so good, because most of those chaps are back at work, bemoaning Monday.

In fact, local time at the other end is always an important factor to consider, for various reasons. For example, Middle-East stations tend to operate more during the morning and evening hours, since the heat of the day can make for very uncomfortable operating conditions in those parts where air conditioning is not necessarily a fact of life. Again, except for the dead of winter, conditions on any DX band are poor around noon local time for any particular station.

Rare DX stations for some reason don't generally respond the same way to clocks that determined DX hunters do; they go to bed at night, and sleep, perchance to dream. If it's three AM in Kuwait, your chances of finding a 9K2 on the air tend to be rather slim. So if a 9K2 is the last one that you need that's on, you'd best take a look at a time conversion table. Your best chance to find a 9K2 would be on a Friday morning, either on ten meter short path, or twenty meter long path. But if it is the weekend of one of the World Cup Soccer games, forget Kuwait - they are rabid soccer fans, and have a fine highly competitive national team of their own, as do some of the other Mid-East countries. No Kuwaiti amateur in his right mind would risk TVI during one of those games!

As you can see, an important part of the game is knowing when to get on a band, and when to get off a band, and what days are best. Most of your tuning time will be spent not looking for a specific station, but rather tuning in general, always hunting. But you always want to try to do it in such a way that you are optimizing your chances of finding a new one, no matter what your country total, as long as there are stations on the air you need.

7

Intermediate Pile-Up Technique

I was sitting at the operating table, the gear on, but I was not listening. Instead, I was tussling with the checking account, trying to figure out why the bank had more money and I had less. I had checked twenty meters earlier, and conditions seemed good, but it was the hours of "in-between," where the band is open but there's little of interest on. The Europeans have all gone to bed, and it's too early for the Middle-East to be up yet. Of course, I could go try the Asian path on 15 meters, and as far as that goes, the central Asian countries should be coming through on twenty short path, not to mention the VU's, 4S7's and the like. If the 9N in Katmandu was not out of the country on a vacation I would be lurking snooping round for him. In any case, if I don't figure out my checking account error, that two-element forty meter beam is a couple more months off, and I'd like to have it up this fall.

But all my calculations are shoved aside when a note pops up on the packet screen – a local note for the cluster only. It's from W9NUD, asking "What's the pile-up on 14033?"

My receiver is sitting on 14,025, so within a few seconds I've got the headphones in place and I'm on 14,033. I hear a few stations ending calls, then the frequency is quiet. The antenna is straight north; I decide to leave it there until I get things sorted out. No one is calling now; whoever the pile-up is over must be transmitting now. I listen intently. The stations I heard calling were sending fairly slowly, which is a helpful clue in seeking the DX station, suggesting as it does that the DX station is also sending slowly. It also suggests that the DX station might be rare. I check the spotting net – nothing on this fellow, whoever he is.

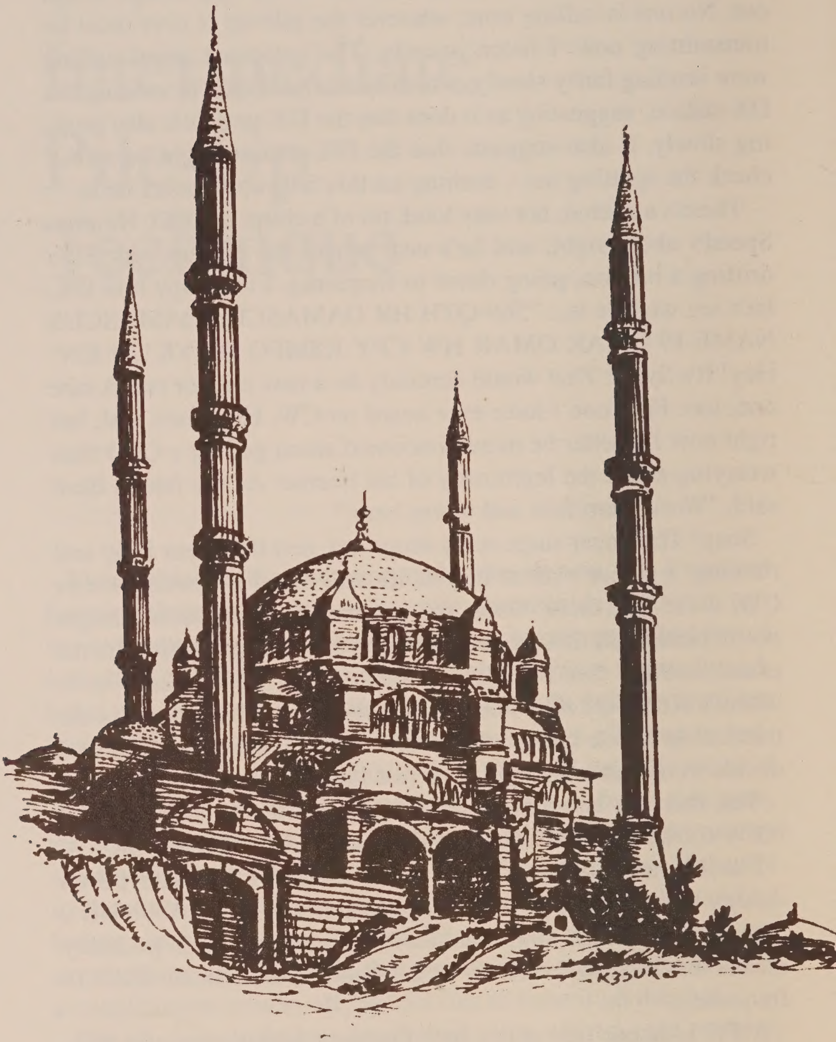
There's a station, not very loud, bit of a chirp, in QSO. Hmmm. Speed's about right, and he's near where the pile-up was. He's drifting a bit, too, going down in frequency. I can copy him OK, let's see who he is... "569 QTH HR DAMASCUS DAMASCUS NAME IS OMAR OMAR HW CPY K8MFO DE YK1AJ KN" Hey! It's Syria! That would certainly be a new one for me. A rare one, too. First one I have ever heard on CW. Hope he's real; but right now I'd better be more concerned about getting a QSO than worrying about the legitimacy of his license. As the fabled Bard said, "Work them first and worry later."

Snap! The linear surge relay drops out, and the linear is up and running. I glance over at it; yes, it's still tuned for twenty meter CW, we're OK there. Oops, the antenna is still pointed straight north; better pull that around to 40 degrees; that probably isn't the exact bearing, but it's close enough. OK, we're ready; now, where's K8MFO? He's not in my receiver pass-band. I press the transceiver synch button, then start tuning, looking for 8MFO. I decide to try listening up one or two kilohertz.

Yes, there he is, about 034.5... "QSL SURE OMAR ES TNX NEW COUNTRY 73 ES GUD DX YK1AJ DE K8MFO SK"

I decide not to transmit my first call on MFO's frequency; even though I haven't really heard the pile-up properly yet, W9NUD's comment on packet suggested there was a pileup, and probably means that there will already be a number of stations on 8MFO's frequency.

MFO is about one and a half kilohertz higher than the YK's transmit frequency, so it seems certain that the YK is listening split. I decide my best shot is to set up about 300 hertz higher than 8MFO's frequency. I set my transmit frequency there, then switch to the other VFO to copy the YK again.


K3JUK

Yes, there he is... "TNX DR DON QSL IS SURE 73 ES DX DE DAMASCUS K8MFO DE YK1AJ YK1AJ SK QRZ? K" As he transmits I study his signal more carefully. Yes, he is drifting down, but not too badly. Slight chirp to the signal. Speed about 15 words per minute; not half bad for a hand key, which he is obviously using, and doing a fairly good job with. It's a heck of a lot better than my fist on a hand-key. I'd be lost without my Bencher paddle.

When he completes his transmission, I pause a second before I start my call, listening on my transmit frequency. I can hear the growl of a pile-up below my frequency where MFO made his QSO, but my own frequency seems reasonably clear. I seem to have guessed right in getting off MFO's frequency. Now let's see if my guess is going to do me any good. This could be a tough one; there's a lot of stations calling him, and why not? Syria is a rare one, and this fellow has a decent enough signal. I call, "DE W9KNI W9KNI W9KNI AR"

I listen again. A few stations calling him on his frequency, making copy impossible, but I can tell he's transmitting. I wait, and one by one the stations on his frequency stop calling. I listen to see who he's in QSO with; OK, it's K9DX. He's in our local DX club too; I guess I wasn't the only one to pick up on NUD's query. Well, at least it should be easy to find K9DX. He's always loud here.

When the YK gives it back to K9DX I move my receiver back up to my transmit frequency. Yup, sure enough, there's DX, about 300 hertz higher than I was calling. Since I set up three hundred hertz above MFO, and K9DX set up 300 higher than me, that means the YK moved up six hundred hertz after clearing with MFO. So, I move my transmit frequency up 600 hertz above DX's frequency, and wait to make another call...

The YK clears with K9DX and sends QRZ, and I call. Again, I give my call three times, and wait for the YK to come out of the QRM. After a moment, I realize that he still is not transmitting, so I call again, but only signing my call twice this time. I open the receiver, and this time I hear him right away; apparently the fellows calling on his frequency had finally waited too. OK, he's in QSO with K8EJ. I wait it out, OK; he turned it over, where's K8EJ transmitting? I move back up. Right, he is transmitting almost exactly on my frequency. Guess he's either luckier or louder than I am, probably both. Anyhow, I move my transmit frequency up another 600 hertz. This ought to be easy now, I've got the YK's pattern. I wait, then call again.

This time I have to wait for the QRM again, but I hear him in there. I can't hear who he's back to, but I wait. My timing wasn't bad, maybe it's me. There, he's turning it back over. Darn, some K5 got him, yes, K5LM. Drat, I thought I was almost in line. Let's see where K5LM is transmitting. I move the receiver back up to my transmit frequency. Nothing, not a darn thing. I look a bit higher. Still nothing. I wonder if K5LM knows he's got the YK. I go back down to see if the YK has started calling the K5 again. Nothing doing there either.

Wait, there's the YK coming back. But he started his transmission with a big "R". And he's definitely responding to K5LM's transmission. Something's funny here. I should certainly hear K5LM; that's an easy path from here. I wonder where I went wrong? And I have an immediate problem; where should I call? Suddenly I'm completely lost here. There, the YK is signing clear. In desperation, I move up another 600 hertz, and call. Maybe K5LM isn't in skip distance, and I just didn't hear his backscatter signal. Deep down inside, I know better, but I don't know what else to do.

I wait, knowing I really don't have a chance this time; something is wrong. Ah, there, he's coming back. Hmm, that will help, W9NUD nailed him. He's only about five miles away, so I should have no trouble finding him. The YK completes his transmission, and I go looking for W9NUD. First, I check around my own frequency. Nothing. I look higher. Still nothing. This is getting ridiculous; I know I can hear NUD. I start tuning lower. Hah! There he is. About two kilohertz below the YK's frequency, and definitely in QSO.

Now that I know where NUD is transmitting, I have to decide where to transmit. Is the YK moving higher or lower, now that he has shifted to the other side of his transmit frequency? I decide to call lower; if he's using a transceiver, he is probably using the RIT control to move around with, and is staying away from his own frequency as a smart DX operator will always do when coping with a pile-up. So, probably what happened is that when he was on the high side of his frequency, and tuning higher every time, he ran out of RIT range, and elected to go to the low side, where 'ole K5LM was lying in the weeds waiting for him. And, W9NUD figured out what was happening, and did it a whole lot faster than I did.

I set my transmit frequency about 300 hertz lower than W9NUD. With a little luck, the pile-up below the YK will be rather smaller than the one above him. At least I hope so. I'd like to think I got smarter quicker! Even if I am lucky that NUD lives only five miles away from me. And there's little hope for those stations calling on the YK's transmit frequency; he is clearly astute enough not to give any of those fellows a chance.

The YK signs with W9NUD. I sign my call twice on my new frequency just below NUD's. Hey! I got him! Yesss! "W9KNI W9KNI DE YK1AJ R TNX OM FOR QSO UR RST 569 569 HR QTH DAMASCUS DAMASCUS ES OMAR OMAR HW CPY? W9KNI DE YK1AJ KN"

"R YK1AJ DE W9KNI R FB DR OMAR ES TNX QSO ES NEW COUNTRY UR RST 569 569 ALSO HR NR CHICAGO NR CHICAGO ES NAME BOB BOB HW COPY DR OMAR? YK1AJ DE W9KNI KN"

"R W9KNI DE YK1AJ FB OM BOB RIG HR HOMEBREW TRANSCEIVER 60 WATTS ES LW ANT PSE UR QSL VIA BOX 126 DAMASCUS MUST QRT NW 73 ES TNX DR BOB W9KNI DE YK1AJ SK QRT CL"

Whew! I grin, the tension draining. I look over at the packet screen – yup – he was spotted about 5 minutes ago, with a note "QSX UP 3" I tune my receiver up three kilohertz above what had been the YK's frequency – wow. There have to be at least thirty stations calling madly, obviously on the basis of the packet spot, even though he said he was going QRT.

I reflect. That was cutting it a touch fine. If I hadn't found W9NUD, I wouldn't have gotten that one. Only during NUD's QSO did I finally figure out what was happening. If it had taken one more QSO, someone else would be logging the YK, and I'd be one of the unhappy DX'ers who didn't make it when the YK went QRT.

I note the time in the log book, being sure I get the UCT time correctly, then pick up the phone for a little postmortem with W9NUD, and to thank him for getting me in on that one. And I want to know how he knew to go looking below. Was he lucky or was he smart? In my case, I know the answer. I was lucky! But that's part of DX'ing too, and especially in the pile-ups.

And that is often how it goes. Especially in the pile-ups, you are dealing with incomplete data in a fluid, dynamic situation where you can only respond, trying to guess what the DX station is going to do next, and at the same time trying to outguess the competition. When you are in a pile-up situation, you want to make your signal as attractive as possible to the DX station. This would seem obvious on the face of it, but plenty of DX'ers never seem to get the message. On CW, your keying should be flawless, and pleasant to listen to, and sent at the speed the DX station appears to prefer, as evidenced by the speed of the stations he is working.

On SSB, especially when calling a station for whom English is clearly a second language, you should call in slow, firm and clear phonetics. Clever phonetics using words unfamiliar to a DX operator are almost sure to fail; if your call sign suffix is JRU, use "Japan, Radio, Tango," rather than "Johnny's Ripe Tomato," for example.

Always, in a pile-up situation, you must make every possible effort to see that your signal is in the clear. In a big CW pile-up it is not reasonable to expect to be the only signal inside a 500 hertz bandpass, but on the other hand you don't want to be zero-beat with four other stations either. On SSB, you don't want to be sharing a frequency with twenty other stations. None of you will likely get the QSO from that frequency. DX stations want a reasonably clear frequency to listen to; that is why they keep tuning their receivers.

Your tactics in a pile-up may need to change, depending on the size of the pile-up, and your evaluation of the likelihood of your success based on normal tactics. For example, if you hear a very rare one on with hundreds of stations locked in heated combat for his attention, and you are running a hundred watts to a vertical, you are going to have to be rather more innovative than standard pile-up practice suggests if you are to have a chance to log him.

In fact, the very first question you should ask yourself is whether you have a chance at all? The question is well worth asking. Let's analyze a few different cases to demonstrate this. First, we'll look at a similar situation. You are running a hundred watts and a ground plane vertical, and the ZD9 which you need for a new one is on. With hundreds of DX'ers calling him, and more arriving every moment, thanks to the packet spot pinging round the world. The ZD9 is a good 569 at your QTH, going rather slowly, and does not appear to be moving his receive frequency much at all. You have 156 countries, and you've never even heard a ZD9 before. What do you do?

You listen for five minutes, taking careful note of his fist and his pattern. You listen to people QSO him, and you note that they are all the loudest people in the pile-up. You memorize the characteristics of his signal; then you QSY. You haven't got a prayer of working him under those circumstances, and on the other hand with him attracting all the hot-shots on the band you have an excellent opportunity of finding another rare DX station calling CQ, all alone and lonely, that you need every bit as bad. Remember, being a successful DX'er is the art of the possible.

OK, now we change one aspect of the above situation. You are a hot shot DX man yourself, and your hundred watts and ground plane have 296 countries worked and confirmed. (If you are a newcomer to DX'ing, be assured that such a score is possible with such gear. For example, the author worked 210 countries in 11 months similarly equipped.) Now, hopeless though it seems, you stand and fight it out. Why? For self punishment? No. Even though you have a much higher score, and obviously know the tricks, you still have two chances of working this ZD9, slim and none. And Slim went QRT an hour ago.

But, with 296 hanging on the wall, the ZD9 patently represents the only game in town. Even though you probably aren't going to work him, you want to learn everything you can about him, and how he works through a pile-up, because you're going to be chasing this one for days, weeks or months until you get him.

OK, now we change it again. You have 137 countries. Conditions are pretty poor, and this shot into the South Atlantic is probably the only chance you are going to have at a new country tonight. And the ZD9 seems to be a pretty sharp operator. He's moving his receiver a lot, keeping away from the big concentrations of callers. His fist is snappy, and his signal good. This time you stand and fight it out on the line of scrimmage. You certainly don't have a sure thing on your hands, but with a little clever operating, you have at least a fighting chance at a QSO, and besides, you'll probably learn something, win or lose.

So, you've made the decision as to whether you are going to stick around and play the game or not. If you aren't going to stay with the pile-up but instead play the odds and tune for another new one, your next move is clear cut - turn the knob. But if you are going to stay, it's time to take stock. You must decide whether your signal is likely to be as strong as most of the people in the pile-up into the DX station's receiver, or rather weaker, or somewhere in between, including allowance for propagation and geography?

If you have one of the stronger signals, your tactics should be to stay rather conservative, and play the short odds. You keep your transmit frequency close to that of the last station to QSO the DX, as long as that seems consistent with the DX station's pattern, knowing that if you keep calling pretty well on the right frequency your number is just about bound to come up sooner or later.

But no, you say, your signal is the kind that keeps linear amplifier suppliers waiting hopefully. OK, how much weaker are you than the pile-up leaders? If you are not more than a couple S units down from most of the stations getting QSOs, and they are from the same area of the country you are, and you are not giving up more than 10 dB in antenna and power, you still stay fairly conservative and careful as well, though not quite as much.

For example, if the DX station is tuning about 300 hertz higher with each QSO, you try to stay about 500 hertz higher than the last QSO instead of 300. Your hope here is that a bunch of the heavies on frequency will figure out the great secret of life at the same time, thereby QRM'ing each other so badly that the DX station will QSY up further than normal, only to find you bleating out your heart and callsign in solitary splendor. And with any luck at all exactly that can happen.

Also, if all the heavies are getting through by signing their calls two times, you always sign yours three times, hoping that the

QRM will open at the last moment allowing you to slip in that one clear call. This technique was Alfred Lord Tennyson's best shot, "One Clear Call For Me." (From "Crossing the Bar.")

You keep nibbling away at the fringes. And, while doing so, you keep studying the DX station, and the tactics of those successful in getting a QSO. You try to figure out the exact timing the DX station likes. You try to anticipate his every move, all the while maneuvering for the break you need. This may sound silly at first, but you will find eventually that there are breaks, lots of them, in most pile-up situations, where a skillful call, perfectly placed and perfectly timed will get through, even though you are several S units below the madding hordes. And, when you do snag the really rare one and get a 569 report and all he has been handing out for the last hour is 589 and 599 reports, your chest swells in honest pride, and you know you are a DX'er.

But no, you say, you are running real QRP, and are way down in signal strength in terms of the other denizens of the madhouse. If the pile-up is really large, frankly speaking your chances are virtually nil, unless you are a close friend of the DX station, and he knows your call extremely well. Then your chances are greatly enhanced, clear up to being very poor.

The biggest problem is that the stronger signals are going to so totally capture the AVC system of the DX station's receiver that practically speaking your signal is going to get wiped out. If the pile-up is a large and avid one, your best bet is definitely to go tuning off, looking for another rare one. Your chances of snagging one elsewhere are enhanced by the presence of the pile-up, because most of the DX'ers active on the band are caught up in it, leaving the rest of the band to you.

But, if you really want to have a go at the DX station in the pile-up, there are still things that you can try. For one thing, if the DX station is listening five kilohertz up, you can try calling three kilohertz BELOW his frequency. Occasionally, some DX stations will have a look below, and you might get lucky. But don't count on it.

There are two other special pile-up techniques; the delayed call and the tail-end. These will be covered in detail in a later chapter. In the mean time, keep your frequency clear and your calls short, and good hunting.

8

Advanced Listening

If you started as a beginner taking the lesson approach in this book, by now your listening skills should be considerably enhanced from your starting point. The time spent digging for the weak signals has surely improved your skill at copying weak signals out of heavy QRM and QRN, at low speed or high. You have gained the ability to "work" a band just as a politician works a crowd, able to ferret out the DX, and to separate the wheat from the chaff. And these improved skills have no doubt contributed to your country total. You have probably even discovered that this type of listening is a lot of fun, with always the possibility of adventure on the next kilohertz.

But the approach taken to tuning so far has been somewhat a random one. Since intensive tuning takes a good deal of time, we must consider ways to make optimum use of the time available for it, taking into account our other obligations to family, job, school etc. Also, we should note that some of the rarer DX stations are exceptionally cagey, and, disliking pile-ups, maintain low visibility on the bands. This does not necessarily mean they are not active though, so we will discuss a few techniques for unearthing them.

First, let's discuss propagation a bit further, and its relationship to tuning for the new countries. As noted in an earlier chapter, the majority of DX'ers go to the highest band open, turn their antennas to the loudest DX path, and listen. And, if you have fifty countries, that is a good plan. With fifty countries, it is fairly safe to say that you should be able to work a new country on almost any path almost any day.

On the other hand, if you have 185 countries, things don't work out quite that neatly. With 185 countries on the wall, you have obviously worked just about all the common garden variety DX around. Now, you are more interested in sniffing out the rare ones that choose to lurk away from mainstream DX routes.

An important source of DX often is the secondary propagation paths. These paths are mostly to be found on fifteen and twenty meters, and more often in the spring and fall months, but they exist year round. For example, a good secondary path from the American Midwest occurs in the summer months. The primary band path in the late afternoon, around 2100 Zulu, is into Europe and the Middle East. But, if conditions are reasonably good, there is often a fine path into Japan and south east Asia at the same time. Admittedly, signals are several S units below strengths on the North Atlantic path, but regardless they are definitely Q5. And they often display some rather nice DX, such as YBs, 9Vs, DUs, 9M6s, V85s and VS6s etc.

Often, secondary paths can include good long path openings, some of them virtually as reliable as their short-path counterparts. An example of this, again appropriate for the American Midwest, is the path into southern Africa. In the morning hours after sunrise, this can be an excellent path, with antennas west and signal strengths on twenty meters that have to be heard to be believed.

This is usually also an excellent path for FRs and FTs, 5R8s, 3Bs, S79s etc.

Hand in hand with that path often is the long path into the Middle-East, and occasionally a shot at some of the really good (for which read "rare") DX. There are more paths like this for the Midwest, but similar paths are regular occurrences from any QTH, especially around the hours of sunrise and sunset. Often, if in doubt, an easy way to find them is to point your antenna in one direction or another off the usual direction for the frequency and time and let out a good CQ DX, especially if you have a linear. You may get a rather pleasant surprise. Once you have determined the existence of such a path, be sure to check it out regularly. Such paths often will have DX glad to work an occasional W station as long as they don't instantly become the subject of a howling pile-up. And remember, these paths are typically seasonal, so they are not reliable year round. But next year, same time, same band, they will almost always be there waiting for you.

One of the attractive features of secondary paths is that they often provide a chance to work DX stations at times that are optimum for the DX station to be active. For example, an early morning long path opening into the Middle-east catches them in late afternoon their time, which is a convenient operating hour for them, so that they are more likely to be on. You can't work a DX station where the operator is asleep in bed.

The likely operating times of needed DX stations clearly is an important consideration. Earlier, we talked about week-ends, public holidays, etc. But, equally important is being on at a time that the DX stations are likely to be on. This means, for example, that to work the Pacific DX islands reliably from the American Midwest it is necessary to stay up till the very late hours of the night, or to rise at truly terrible hours, such as 3 AM local time, to snag elusive little goodies like a VK0 on Macquarie.

Remember, DX stations often are not interested in country totals, nor are they particularly interested in getting up at funny hours and skipping meals just so they can QSO another thousand Americans. If they want to work Americans, it will be at their convenience and pleasure, not yours.

Some DX stations, though, are interested in working a rare one. And, often, what is rare for them is not necessarily rare for you. For example, an XE in Mexico is considered an excellent catch in some parts of the world, and an XE with a good strong signal can raise some fine pile-ups of DX stations, as indeed can most Central American and Caribbean stations.

This, in turn, offers a good chance for the patient DX'er to snag a goodie out of the pile-up. The technique is simple. Find a "local" DX station doing his thing with a pile-up of European or Asian DX stations. Start listening to the pile-up itself carefully. Chances are surprisingly good that you will find a goodie or two in there calling.

But, like the 7X station in the earlier chapter, working them requires finesse. To set your transmit frequency dead on the frequency of the DX station's quarry and give him a call is just about guaranteed to fail, not to mention earning you the enmity of the pile-up at large. Rather, you must work very carefully.

There are several possible ways to get your quarry, depending, in large part, on what the other DX station is doing. For example, if the XE is, let's say, slow and deliberate, giving out his name, QTH, power level, weather etc. with every QSO, and the V85 you are trying to snatch out appears to be a rather competent chap, you might try setting up your VFO about 300 hertz above the XE's frequency, and, just after the XE has started a transmission to some one else, with the V85 waiting patiently, blast out a fast "5CM DE W9KNI W9KNI 56N BK".

In this way, you are telling V85CM that you want a QSO, that you do not wish to mess up his chance with the XE, and that you won't attract further attention to his exotic callsign, since you left out the V85 part.With any luck, and if you did it politely, you may get a response, "W9KNI R 57N QSL 73 SK". That's all, but that's all you need. You would respond, "R TU 73 .." Clearly, a very minimal QSO, yet one in which the nuances exchanged equal the actual QSO information and a new country in the log. And that's what it's all about.

On the other hand, let's say that the XE is a pretty snappy operator himself, whereas the DX station you are trying to grab does not appear quite so sharp. There are several possible approaches to this situation. One is to wait to see if the XE finds the DX station himself and QSOs him, then leaving you the chance to call the DX station several hundred hertz above the XE's frequency, asking the DX station to QSY up five, perhaps. (And when trying this it is almost always better to call higher in frequency above the original DX station, rather than lower.)

Another ploy is to call the XE yourself, trying to secure a quick QSO, and informing him that the rare DX is calling him. It may well be that the rare DX is stronger at your QTH, and the XE will appreciate the information. Doubtless, you will ingratiate yourself with the rare DX station as well. The trick to this is to turn your antenna towards the XE to give your signal enough punch to get the QSO started; then, once the QSO with the XE is established, immediately turn your antenna back to the rare DX you are hunting. The XE will still be able to easily copy you, but you want to make sure the V85 hears you telling the XE that the V85 is QRX. Then, as soon as the XE is finishing with the V85, you ask him to QSY off for your QSO. This scheme is hardly guaranteed to be a sure thing, but skillfully done it can often work. Nothing ventured, nothing gained.

The other approach is to sit it out, waiting for the XE to QRT, should he not QSO your quarry. When the XE closes down, it can be a bit tricky, since the station you are interested in will be disappointed in not QSO'ing the XE. Also, he will be hoping somehow that the XE will still hear his call and come back to him. Your best bet in this situation is to be sure that you are at least several hundred hertz off the XE's frequency, then call the DX, usually without using his entire call, with a message that you are QRX. Like, "5CM DE W9KNI W9KNI QRX HR".

Again, we are telling the DX station that we do not propose to draw attention to him, and that we understand his wish to QSO the XE first. At this point, presumably, the V85 knows the XE is probably QRT, and hopefully will appreciate your politeness enough to give you the QSO.

Careful tuning, as you will have learned by now, will be constantly turning up rarish DX stations engaged in their own operating situations, such as in QSO with a pal, chasing their own DX, calling a directional CQ for which you do not qualify, calling a station on schedule etc. Most of these stations can be QSO'ed, albeit briefly, but only if you adopt an extremely courteous approach. After all, they are interested in such circumstances in something other than a QSO with you.

The approach you need to take in these situations is almost always the same; call them several hundred hertz off the frequency you think they are listening to, at a time you are sure there is no one else transmitting information they would rather be copying, and always only after a pause that shows them you understand they are busy elsewhere.

Similar tactics can be used on SSB. For example, if you hear the V85 calling "CQ South America," delay several seconds after he has completed his call, and, when you are sure he is getting no response form a South American, make a brief call, and, as on CW, perhaps using his suffix but not his prefix. If that call goes apparently un-noticed, simply wait. If the V85 takes no apparent notice of you, and calls "CQ South America" again, wait. After he has made a SECOND CQ call to South America with no response, repeat your call again, "5CM, here's W9KNI QRX for you, Old Man, W9KNI QRX."

Never make a big thing of their call under such circumstances, as it will be sure to attract a pile-up when others hear you calling the station, which is the last thing the V85 likely wants, since he was calling South America, not "CQ hordes of W stations". . Respect his wishes, and he may grant yours.

Another sneaky tactic that can help in such circumstances is to make such calls at reduced power. A DX station NOT looking for a W QSO may very well take more pity on a weaker signal than on one that blows his eardrums out, and may further figure that a quick report is less likely to lead to an unwanted pile-up of howling DX'ers. If several careful calls go unrewarded, you can always turn the linear on and try again. If you know your signal is likely to be very loud at the DX QTH, it will always be wise to reduce power in such one-on-one situations where you are not the station the DX seeks to work. An S-6 signal pleading for a QSO is more likely to be acknowledged by the DX station, whose intent is elsewhere, than one 20 dB over S-9. And, if you are the only one calling him, the power is otherwise not important.

Although you must keep QSO's thus snagged very short, you always want to confirm that the DX station understands you will be after a QSL, to help insure that he actually logs the QSO. Generally, something like TNX NEW COUNTRY or "thanks for the new one, and I'll be sending my QSL tomorrow" will do it, but be sure you let him know you will be QSL'ing the QSO. And get the QSL out as soon as possible via air - if he failed to log the QSO, perhaps he will remember you.

An old saying for the hunter is that to hunt for a tiger you have to think like a tiger. There is a natural corollary for the DX'er; if you want to work rare DX, you must think like rare DX. While this is something of the essence of pile-up strategy, it has other ramifications as well.

Let's pretend for a moment that we are a rare DX station. Now, the reason we are considered rare is that we don't have much interest in working another five thousand W stations so that we can exchange reports and QSLs. We already know very well that our signal is capable of reaching any part of the world, and meaningless QSO's to prove it are of no interest to us.

Yet, we continue to be operational, because we do enjoy ham radio. The question becomes how do we stay active without always raising huge pile-ups? There are several tricks we would use to achieve this aim. For one, we operate, when possible, at the times that the W operators are mostly in bed, or when propagation is not favorable for W stations. For another, we use a directional antenna, and try to minimize our signals to those areas where we will encounter pile-ups. We never call CQ, preferring to only answer those of the stations we want to QSO.

When we run schedules with our pals, we do it on funny frequencies, like 14110, or 21188. We use call signs only at the bare minimum, in fact often rather less than our licensing authorities prefer. We are not totally against working W stations, but we certainly don't need more wall paper.

Now, reverse roles again. We are the American DX'er interested in QSO'ing that elusive one. We know that there are DX stations active that we need, like the fellow described above. In truth, both Africa and the Pacific are full of them, operators regularly active from countries that most DX'ers are prepared to swear have been off the air for years. But, having thought out the DX station's position, and being aware that he is not interested in pile-ups, we start searching the byways as well as the highways.

We search all the useable DX frequencies regularly, not just the bottom fifty kilohertz of the band, and we do it with the RF gain wide open so we can hear the weak ones, off the side of their antennas. We get up regularly at funny hours of the morning to have a look around, both to the West and to the East, especially on twenty meters. We listen to the ragchews, deciding whether there may be something good in one, especially if the band is uninteresting. We regularly check out slow speed CW signals, and listen intently to QSO's in other languages, even though we do not necessarily understand them. A lot of rare Africans prefer to QSO in French, for example, of which more later.

Above all, we are patient; waiting, watching, listening, thinking. We are DX'ers.

9

Some Advanced Techniques

There are two especially useful techniques in certain DX situations; the tail-end and the delayed call. Both of these tools are special favorites of knowledgeable DX'ers. Each of these tools is very different from the other, each having its own place. And each of them, especially the tail-end, can do a great deal more harm than good if used improperly.

...It's Saturday morning, a rainy day in June, but a gentle rain with no local thunderstorm activity. The soft air smells fresh after a long spell of dry weather, and the power line noise that has been a steady S-5 to the West is gone. I'm tuning twenty meters, hoping to find a goody somewhere. There is hope; while there appears to be no long-path propagation to the Middle-East, I hear several strong southern Africans, a very strong VK6 in Perth, and scores of JA signals. The antenna is set on 290 degrees, splitting the bearings between South-East Asia and the long path into Southern Africa and the Indian Ocean.

As I cross 14,030 kHz, I strike paydirt, "R QSL VIA KØHGB OK 73 PAUL ES TNX QSO W6ZJ DE V85CM K" It's Brunei! I worked a V85 several years ago, but never could snag anything resembling a QSL, in spite of repeated efforts, so this one is as good as a new one for me. And joy of joys! A rarish DX station with a good signal, a good fist AND with a QSL manager. My cup overfloweth – if I can manage to work him.

Needless to say, I am eager to put this one into the log. I find W6ZJ, a few hundred hertz above the V85. I move my transmit frequency up about 200 hertz above W6ZJ, as he signs clear. Just as ZJ begins signing his call to conclude the QSO, I hear "N4AR". That's all – one call. Huh. That sure doesn't seem very likely to work.

I wait for the V85 to send the traditional "did-dit" to finish the QSO – but instead, I hear "73 TU NW N4AR DE V85CM GM OM ES TNX…"

Huh. That one time call apparently did work. The V85 sends finishes his transmission and turns it back to N4AR. N4AR does not tarry – he gives the basic QSO details, promises a QSL, thanks the V85 and signs. As he is doing so I set my transmit frequency just above him. I look at the spotting screen – good – no one has called him in yet – this could get messy fast if anyone does.

But as N4AR signs, I hear "K5VT" dropped in, almost exactly on the frequency I am set up on. I wait for the V85 to sign clear, but suddenly I have a bad feeling that I have been had – again.

Yup – the V85 clears with N4AR and swings right over without pausing to K5VT. Darn!

Well now, if that's how the game works I can play too. While K5VT is transmitting I move my transmit frequency up so I am about 200 hertz above him – that's enough to be copyable separately from K5VT, as long as I am not buried by K5VT's signal in the V85's AGC receiver loop. VT starts signing, and I drop in my call, "W9KNI". And notice that at least one other station did the same thing, but I only heard the last letter of his call, a "V", calling quite a bit below my frequency.

The V85 comes back and signs clear with K5VT – I hold my breath – and goes over to "W9" – my heart sings – "JUV" – and just as quickly stops dead. Darn! I listen. JUV set up 200 hertz below K5VT, while I set up above VT. Well, at least the idea was good. OK. I'll move down 200 and be on the frequency K5VT was on. I'll still be 200 hertz above JUV, and I know that frequency works – it worked for K5VT.

I glance over at the spotting screen – oh oh. There he is, called in by a WB8.This is going to get ugly. JUV finishes quickly – I bless him for not trying to start a ragchew. I drop my call in right above him as he signs clear.

The V85 signs clear with JUV and then comes back, "NW W9KNI…" Beautiful music to my ears!

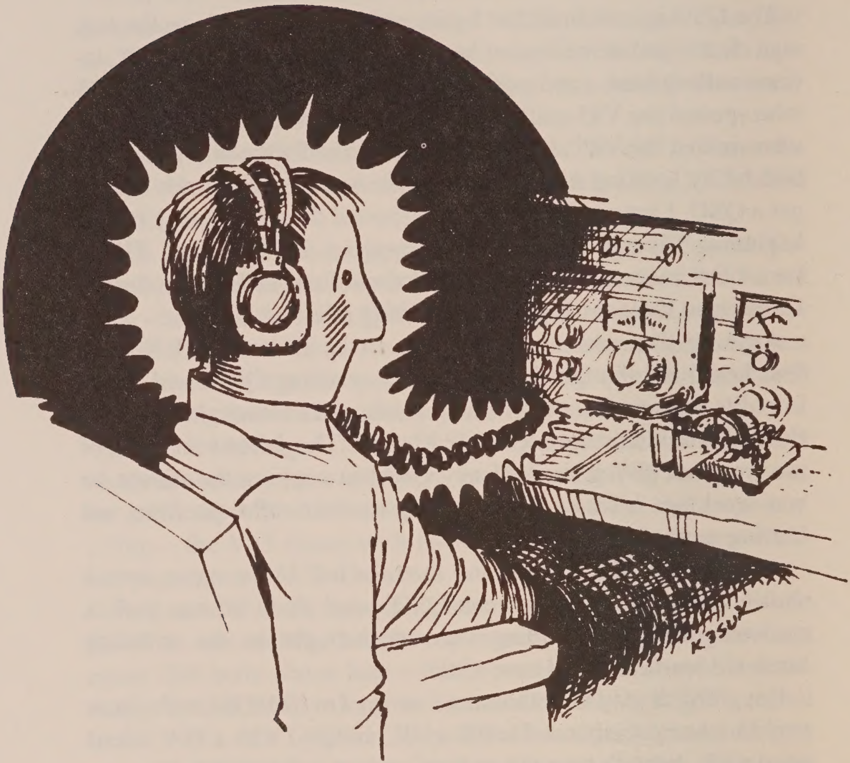
The QSO is anticlimactic. I grin as I note the details in the log, sign clear – and wow! Instant bedlam. There must be dozens of stations calling him – and perhaps most pitifully – I hear the WB8 who spotted the V85 calling frantically. I sincerely hope that WB8 who spotted the V85 already has it confirmed – the pile-up he just created by spotting it is going to make it very difficult for him to get a QSO. I am reminded of the purported first lesson they taught beginning Vikings a thousand years ago – "Pillage first, THEN burn." Our modern corollary: "Work them first, THEN spot them." Unless you want some practice cracking pile-ups.

Anyhow, thus was my introduction to the Tail-end call. When I first heard it I thought it was stupid – causing QRM and being impolite to boot. But then I saw it work, and I rethought my position. Maybe that's not so dumb after all. The fellows in front of me were not giving the V85 any QRM in copying the station he was working. All they did was drop in their calls one time, not hurting anybody.

And it worked! For them and then for me. In the mean time it shortened up the time between QSO's and all in all was a slick exercise, until the spotting network brought in the ravening hordes. I learned a neat new trick.

I'm going to play with this some more - I'm like a kid with a new toy! I move up the band. There's a VK3 in QSO with a W4; I don't need a VK, but let's try a tail end call on him and see what happens, soon as he signs with the 4. A little practice never hurt anyone. Yes, there, he's signing, and turning it to the W4 for his final. OK, there's the W4, I set the transmit VFO up a hair above him. Right, there, he's signing clear; I drop in "W9KNI" and sit back.

Hah! It worked again. Where have I been all my life? This tail-end business is the greatest. I have a brief QSO with the VK, and I'm off looking for new worlds to conquer. Yes, now there's a nice one; a P29, with several stations hot on his tail, but he's coming back to one of them, yes, a W4. I look at the


K3SUX

spotting screen – yes he was called in about ten minutes ago, so the pile-up is there, though the V85 has creamed off a lot of the DX'ers working the bands.

Oh-kay. I don't need a P29; I have one on the wall, but no harm showing the troops how it's done, heh heh. This ought to be like shooting fish in a barrel. The W4 is not very strong on back-scatter, but plenty strong enough for me to set up my transmit frequency just above him.

The P29 is not going fast, and is exchanging complete QSO information with the W4, but soon they are signing with each other. I slow my keyer down a bit, slightly faster than the speed of the P29, just like those fellows were doing with the V85 earlier, and just as the W4 starts his call in finishing the QSO, I neatly drop in my call, "DE W9KNI" and sit back, picking up my pencil for the log info. Hah! "W4CK DE P29JK OK MARK TNX QSO GNG QRT NW W9KNI QRMED U ES I WILL NOT QSO W9KNI AND I QRT INSTEAD 73 ES GOOD DX W4CK DE P29JK SK QRT CL"

Oops! Big time Oops. My face is red, and hot. How do you crawl under a rock on twenty meters, with a pile-up of frustrated DX'ers writing down your call in the margin of their logs. And yup, there's a spotting announcement thanking me for running off a good DX station, there for the whole world to see if they weren't already on frequency.

You know, maybe that rain outside has let up enough for me to go out and pick up the yard a bit. Somehow, I don't feel like operating much today. Or, as the old Bard said, "Live by the tail-end; die by the tail-end." And sure enough; I died. Sure am glad I don't need a P29, though...

Like many aspects of DX'ing, the tail-end call is a two-edged sword. It can be a marvelous tool for knifing through a pile-up, or a good way to commit ritual suicide. As is always the case, the final verdict rests with the individual DX station, not in some rule book. Some DX stations are very happy to pick up tail-end calls. Others ignore them. And a few get very upset with them.

Unfortunately, there is no simple way to determine whether or not to try the tail-end. Over the years you learn a few things, things that at least give you a clue. Of course, the safest thing to do is to let some one else try the technique first. But, sometimes, the sacrificial lamb fails to appear in a timely manner. And, as you listen, the band is slowly going out and the pile-up is increasing rapidly. What to do?

There are several guidelines. The first is that if you think you can get the QSO without using the tail-end, then don't try using it, unless you know that the DX station is accepting tail-end calls. Why risk angering the DX station?

If the DX station is a good operator, and going at a decent speed, it is usually fairly safe to try a tail-end, IF you time it properly, and IF you spot your frequency accurately enough to be sure that you are not causing QRM. If you can't spot your transmit frequency that closely, don't even THINK about tail-ending unless you are seeking a reputation of other than honor roll stature.

If you still are unsure in a given situation, there are several techniques worth trying that can limit possible damage. One is to go QRP on tail-end calls, QRP being in this case at least 10 dB down from the fellows getting QSO's with the DX station. Also, be sure that your transmit frequency is a bit further off the station in QSO than you otherwise would, say 300 hertz instead of 150 to 200.

There is one other potential benefit of tail-ending. Often, DX operators will not appear to accept tail-end calls because they are trying to keep control of the pileup and prefer not to encourage the use of them, but they are not upset by a properly executed attempt. This situation gives you a chance to "show" your call and frequency before the pile-up starts. If you suspect this to be the situation, try careful calls perhaps 300 hertz off the QSO'ing station's frequency, and do not move frequency during the pile-up call, but call as you normally would in a pile-up. There is a good chance the DX station will pick your call up, having heard your tail-end. However, if this trick fails to bear fruit after three shots at it, quit! You may be running a real risk of getting on the DX operator's bad side.

Tail-ending, then, can be a valuable weapon in your kit bag. But it should be used conservatively. Unless you know for a fact that the DX station is accepting tail-end calls, attempts should be made very sparingly. The QRP operator can pretty much use it at will; his low power is unlikely to anger the DX station, and he has little to lose. All other operators beware!

Tail-ending can sometimes work quite well on SSB too. However, once a pile-up develops on SSB it usually is ineffective, and will upset the DX station all the quicker. And, as on CW, setting your transmit frequency say 200 hertz off the working station's frequency can help – it may help catch the ear of the DX station.

The overriding rule on CW is to be careful and not overdo the tail-end; on SSB be even more careful!

There is another special technique that can be of great value in pile-ups, and unlike the tail-end call it is a technique that usually will not get you in trouble. This technique is known as the delayed call. It is not a trick for every one; proper use requires steel nerves, and it runs counter to most people's idea of how to operate in a pile-up. That, of course, is why it can be successful...

Band conditions are pretty poor, but you certainly aren't getting a complaint from me, even if it is a vacation day in mid-week. Because, you see, about twenty minutes ago I caught ZD9HL calling CQ, nice and slow, big and fat. I was all over him like a ton of bricks, and soon writing the QSO details into the log. I then spotted him onto the net and the resulting pileup simply added to my pleasure. A new country! How sweet it is.

Now, with little hope of anything else good showing up, I am sitting on the frequency, listening to the mushrooming pile-up. The ZD9 appears to be a new operator, working slowly and carefully, a bit tentative. He does not seem to be moving his receive frequency much either.

It's amazing how quickly a pile-up can form on a rare one, even in mid-week on a crummy band. As I listen, I hear more and more stations entering the fray. The ZD9 is certainly aware of this; now he has dispensed with much of the QSO information, and is more or less down to reports. And with each QSO the pile-up mounts.

As I sit listening, I start watching carefully, trying to see what techniques those stations who get through are using. In fact, I pretend that I am the ZD9. Of course, signal strengths are not the same for me as they would be for the ZD9, but it is still an interesting exercise.

It quickly becomes apparent that the primary interest of the ZD9 is to find stations that he can copy one way or another. He must be using an old model transceiver without RIT, since he seems unable to move his receive frequency. Everyone that he works is within a few hundred hertz of my original transmit frequency.

However, many of the stations calling him seem unable to place their transmit frequency inside that relatively narrow slot, and their calls are in vain. And within the narrow bandpass that the ZD9 is listening to, it seems that he is moving his ear around a bit. The main criterion for getting a QSO seems to be to transmit on the ZD9's listening frequency with no one else zeroed on you.

I make note of the calls that seem to be on the right track. I notice ol' Louie, K5LM, calling in there. Louie is an old friend, and noted for being a superb tactician in the pile-up, so naturally I listen with special interest, waiting to see how he proposes to solve this puzzle.

The situation appears to be slowly deteriorating, even though the ZD9 is struggling to do the best he can. The QRM is rapidly building, and the ZD9 is taking longer and longer to come back to each new QSO. Obviously, his equipment, and perhaps his lack of experience, are not helping the situation.

I listen to the QSO's, glad to have the fellow in the log. There, he's signing clear with WB4OSN. Listen to that pile-up. Yes, there's Louie, right in the middle of the slot the ZD9 is taking calls out of. OK, the ZD9 is back, to another 4, an N4... Right, he's done. There they go again. Louie has moved down perhaps 200 hertz. Nope, that didn't work for him either. The ZD9 is back to an 8, a KB8... OK, they signed. There goes the heap again. Where's Louie? I'm not hearing him. Boy, listen to those fellows all nearly zero beat QRM'ing each other in the ZD9's listening slot. But I don't hear Louie.

There, the pile-up is thinning out, and the ZD9 still isn't back to anyone. Hey, there's Louie, and on a slightly different frequency, too; "DE K5LM K5LM AR". Gosh, he had a clear frequency for a moment, right after all those other stations signed... And there! The ZD9 is coming back to Louie! All right, Louie!

That was really neat. When Louie figured out the scene, he quit calling while everyone else kept on, and laid back in the bullrushes, his hand on the dial. As soon as the pile-up started to let up, he found a frequency that cleared for a moment, quickly dropped his transmitter on it, and got that clear call. That is the delayed call technique. And it worked.

The technique can be a very useful one indeed where the DX station is slow in coming back. Not every DX station has super crystal filters cascaded, and waiting for a frequency to clear is often the only way that he can copy a call. This means, in turn, that the astute DX'er can lay back, waiting for that frequency to clear, and grab it for his call.

Obviously, to make this technique work, the DX'er needs flawless timing, the ability to quickly and accurately zero, and the patience to wait for his opening. This means not calling the DX with the rest of the pile-up, but rather holding back, waiting for the opening to drop in your call.

The delayed call is an equally important technique for the SSB DX'er, especially where the DX station is working stations only on frequency. A few moments pause until all stations on frequency have made their calls will frequently offer a brief moment where the QRM has died down, but before the DX has been able to copy a call, giving you a chance for a quick call.

The reader will also have noticed another useful technique here: listening as if you were the DX. Putting yourself under the DX station's headphones is a good way to see what techniques are effective, both for that specific station, and for working DX in general. The good DX'er is always trying to learn.

10

CQ DX CQ DX CQ DX DE...

For years, one of the most vilified techniques of DX'ing was the "CQ DX call," but this situation has been changing, and this technique is now more frequently used. True, for the QRP operator, calling CQ is most often an exercise in futility. (Except perhaps on the QRP frequencies) But for the operator with an anemic country count and a decent signal, it can be an effective way of fattening one's country count in a hurry. Also, there are occasions where it is an excellent technique for snagging a particular station, but this aspect will be covered later in the book.

There are a number of reasons why a CQ DX call can be an effective tool. For example, some rare DX stations do enjoy QSO's that are more meaningful than the usual hit and run types. If they respond to a station's CQ DX call, they hope for a proper QSO that ignores the rareness of the DX station. And, a QSO of this type, with perhaps some interesting exchanges, is far more likely to generate the needed QSL later. It can even lead to an interesting friendship.

Another reason for a CQ DX call can be to help stimulate a little action on a path that is open but not in use. If you have a directive antenna with gain, you should by now be well aware of the many secondary paths that open up, particularly on twenty and fifteen meters. Some of these paths can be to rather exotic areas of the world, where almost any station qualifies as rare DX, encouraging such stations to lie low if they are not in the mood to deal with a snarling pile-up.

Some rare DX stations have a situation where they are close to a country with a large and active amateur population, so that any time they try a CQ of their own they are sure to be buried in calls from the nearby amateurs. An excellent example of this would be a station in the Philippines, or in Hong Kong, in easy skip distance of the huge Japanese amateur radio community. If the VS6 or the DU does not want an instant pile-up of JA stations, he avoids CQ calls, but if he is tuning the bands looking for a QSO and hears a nice strong W signal calling CQ DX, there is an excellent chance the W station is going to get a rather nice log entry out of his CQ.

Another situation where CQ calls can raise some excellent DX is during an international DX contest, especially the CQ WW contest, the All Asian contest, and similar contests. As will be discussed later, however, there are so many good opportunities to snag new ones in such a contest that the DX'er is usually better off looking for the new ones rather than waiting for them to come to him. Still, in such contests there are invariably rare stations operating that can only be raised on a CQ, so even then some CQ calls can be indicated.

...It's a late August Saturday afternoon, and for a change the chores are well in hand. The Cubs are in New York riding a nine game winning streak, but it's a night game. (After all, there ARE other things besides DX). A look over twenty meters shows it to be in decent condition, with a good contingent of European signals coming through with nice signal strengths. But I only need Albania, Mt. Athos, and Monaco from Europe. I suppose there is a slim chance of a 3A or a ZA showing, but I am not holding my breath. And my chances of tripping across a genuine Mt. Athos operation are minimal.

I swing the antenna around to the north-west, across Japan and into S. E. Asia. Careful listening unearths a couple JA stations with S-7 signals. What the heck, I decide to try a CQ. I find a clear frequency, and confirm it with a "QRL?" which goes unchallenged. I set the keyer at a nice comfortable speed, not too fast , and transmit, "CQ DX CQ DX CQ DX CQ DX DE W9KNI W9KNI CQ DX CQ DX CQ DX CQ DX DE W9KNI W9KNI W9KNI CQ DX CQ DX CQ DX CQ DX DE W9KNI W9KNI W9KNI DX AR K"

I open the receiver. There, a couple stations are calling me. OK, one signs his call first, OK, it's a JA. Let's see who the other one is, maybe I'll get luckier there. Nope, it's a JH3. Oh well, I'll take the JA. I respond to the JA, and we have a nice though brief QSO. Taka's English seems a bit limited, but I can't complain. It's far superior to my Japanese. Soon, after promises of QSL's, we sign, and I go fishing again, with a "QRZ DX QRZ DX DE W9KNI W9KNI AR".

Again, two signals calling me, with possibly a third at the edge of my pass band. I move the dial a hair; yes, another station calling me. I start copying calls; the JH3 that called me last time, a JI1, and the signal off to the side a KA7. I pick up the JH3, after all, he was willing to wait. I have another QSO just like the previous one. Again, when finished, I call, "QRZ DX QRZ DX DE W9KNI W9KNI".

The path must be pretty decent, especially considering that it's a secondary path; I hear four or five stations calling me. Again, I try to sort out the calls, looking for the cream that I'm hoping will rise to the top. Hello! There's a different call. Yes, it's an HL9, Korea. There's one that's not all that common, even though I have one. Yes, that's more like it. I'm always willing to talk to the JA's, but something more exotic adds a little spice.

The HL9 turns out to be an American serviceman stationed in Korea, and from the Midwest. He seems glad to get the news of the weather, and we discuss the Cubs, wondering how long their win streak will hold up. After about fifteen minutes of pleasant exchanges, he has to QRT for duty.

It appears that the band must be changing now. There is only one signal calling me, and I wonder if the path to Japan has faded out. Secondary paths can be very selective that way. There, the station calling me is signing his call.

K8SUK

Hah! 9M6SP! East Malaysia, and a gem! A new one for me. I didn't know anyone was active from there.

Even though I'm in a mild state of shock, my trusty Bencher paddle helps me through my transmission. I give him a report – 569 – and tell him my name and location – the usual. He responds, having copied solidly, and, with the preliminaries out of the way, we begin to ragchew. His name is John, and he is in a small village near a town called Sibu. He tells me of the weather and his rig. He tells me about his gear; an early FT-101. He is using a home-made half-wave vertical for an antenna, with open wire feeders and a bamboo mast. His antenna tuner is cobbled out of capacitors and switches from a World War Two military transmitter, with coils wound on dried and varnished sections of bamboo!

It seems that he is an expatriate Englishman in Malaysia working as a teacher. He tells me about the school he teaches in, a secondary school, and he teaches mathematics and physics. He has been in East Malaysia for fifteen years, having gone there as a soldier, and deciding to return after his enlistment was over. He is married to a Malaysian lady, and has two children.

He was very glad to hear my CQ, because he likes DX QSO's, but his FT101 lacks a CW filter and the RIT no longer works, so there is no way that he can handle pile-up situations. As a result, he only QSO's stations by answering CQ calls.

I ask about the paddle and keyer he is using. All homebrew, too, the keyer from a kit purchased mail-order; the paddle from a pair of J-38 (you guessed it - war surplus) hand-keys mounted back to back making an iambic paddle.

Needless to say, I am impressed. I glance over my gear. Hardly a comparison. Not to mention the very modern Skyhawk yagi perched atop the sixty foot tower, and the 3-500Z afterburner hooked to the coax. But there he is, with a good clean signal, a pleasure to copy.

I ask if he needs any spare parts I could help him with. He tells me the driver tube in his rig is going soft and he lacks a spare – he gives me the tube type number. While I don't have one, I know for a fact that one of my buddies has several spares left over from his old rig, and I know I can liberate one or two of them. I pass that information to John, and bask in a golden glow at his thanks in advance. I promise to have a care package on its way within the week.

His signals begin to fade, slowly but surely, as he finishes a long transmission. I tell him that I shall be sending him the tubes along with my QSL, and propose a schedule for the following week-end. I pass along 73 and the usual closings, and turn it back. He is definitely weaker now, but I am still able to copy solid. He agrees to meet me a week hence, and thanks me again for the tubes. Also, he promises to QSL via air mail on Monday, so I can be looking for a fast one there.

He signs clear as his signal sinks into the mud. About twenty stations start frantically calling him, but as I expected, he comes back to no one. I hear, very weakly, JA stations calling him as well, but after what he said earlier, I am fairly confident he is gone. And he is.

I sit back, thinking. Wow. A new country on a CQ call, a rare one. But even more, a QSO that is truly one of the more memorable of my amateur career. An exotic spot on the Isle of Borneo, with a fellow from a common heritage, but leading a far different life. And the gear he was using! It all makes me proud be a ham and a DX'er, letting me work interesting people like him.

I go up the basement stairs, jealous of John in Borneo. I imagine that his life is more interesting, and rewarding. And I dream of tropic palms and bamboo thickets. But we are what we are, and what will be will be. And if I can't go to exotic places, and do interesting things, at least I can talk to people who do. And keep chasing new countries...

The QSO described above is a kind that will never come of winning a pile-up. And it is a sort of QSO that, unfortunately many DX'ers have never experienced. Yet, such QSO's are far more common than most amateurs will believe. There are significant numbers of stations operational in areas considered rare, like John on Borneo, operators that lie low because they lack the modern gear capable of coping with pile-ups.

There are a number of other ways to smoke some of these DX stations out, and this subject will be further discussed later, but suffice it to say that a CQ DX call is one good way to do it. If you are running 150 watts to a mediocre dipole, CQ DX calls will serve to do little more than enhance the profits of the electric company. But, if you have a good directive antenna such as a quad or a yagi, at fifty feet or better, your chances are pretty good, even running bare-foot, and of course are enhanced if you are running the legal power limit.

CQ DX calls can certainly be aimed at the major path of the band, but you are likely to be better rewarded trying the secondary paths of twenty or fifteen meters. For one thing, to the DX station at the other end, you may well be the only W signal on the band, since most of the other W stations on the band usually have their antennas on the primary path opening. Remember, it is new countries you seek, not reports from countries you have worked a hundred times.

Also, when you are calling CQ DX, you are sure to raise a lot of responses from stations you certainly don't need, such as JA stations on the path to SE Asia. Fairness says that you must work these stations as well if you don't get a call from a rarer one; but indeed the author's experience has been that the rare ones come back more often on the QRZ DX calls at the end of a QSO rather than to the initial CQ. Probably this is partly because the rare DX doesn't wish to transmit until he is sure that you are listening in his direction, as he seeks to avoid raising a pile-up of stations more local to him.

To sum it up, if conditions seem to be favorable, and you are finding nothing new on the bands after a careful tune, give the CQ DX technique a try. And if it doesn't unearth a rare one at first go, don't give up; it is a technique that requires patience. And it is like any other technique of DX'ing; the more time you put into it, the better rewarded you will be.

11

CONTEST!

Contests offer the serious DX'er an unparalleled opportunity to grab a lot of countries, often including a number of rare ones, in a very short time. Additionally, most of the aspects of successful DX'ing and country hunting are compressed into one or two weekend days. There are towering pile-ups to be fought, often over stations that on any other day would hardly raise an eyebrow. Rare DX lurks between the big guns and their "CQ TEST" machines. Contests offer the committed country hunter a rare chance to practice techniques, sharpen skills, and snag some new ones.

However, the DX'er must first decide whether he or she is a DX'er or a contester. There is a very significant difference. The DX'er uses a contest strictly as a vehicle to grab new countries, improve chances of getting QSL's not already received, and to sharpen skills, both in tuning for the rare ones and slugging it out in the pile-ups. The true DX’er is NOT tempted by QSO's meaningless to him just to fill lines in the log sheet.

This does not mean, of course, that there is anything wrong with contesters; indeed it is thanks to them that DX'ers get such wonderful DX'ing opportunities. And those that love contests are equally brother amateurs. But, the goals of the contester and of the true-blue DX'er are much different in contests. The contester generally works every station he can find that he is allowed to work, and additionally becomes involved in pile-ups over stations that, outside of the contest format, would have no particular value.

This book should be of value to the fledging DX Contest lover – though hardly the definitive work on successful contesting, many of the skills taught in this book are of considerable value to the contester, especially some of the pile-up techniques. None the less, we are operating on the presumption that your primary interest in the contest is that of the confirmed country hunter.

There are several contests that are especially important to the DX'er. Generally, the far and away best for the DX'er is the CQ WW contest, with the Phone weekend in late October, and the CW weekend in late November, generally (but not always) just after the American Thanksgiving Day. Other important contests include the ARRL DX contest in early spring, and the summer All Asia contest run by the Japanese.

The early hours of a major contest are generally chaotic, with the "big-gun" contest stations intent on establishing their CQ frequencies, and everyone scrambling to get rarer stations into the log in case their contest participation proves to be limited.

The DX'er in the early hours of the contest generally has his best luck working on the secondary paths, staying away from the major openings. If fifteen meters is wide open to Japan, the astute DX'er will be checking it out for the Antarctic islands, and watching the trans-polar path on twenty. In other words, avoid the mob scene, and tune between the pile-ups.

Generally, on Saturday morning the bands tend to get shaken out. The multi-multi's have staked out "their" frequencies, and woe to those who trod near them. Usually, a bit higher up the band, things begin to open up a bit...

I slept very well last night. Fifteen had been pretty good last night until about 0200Z, when it pretty well closed down. I had been hoping for some goodies in the South Pacific, but nothing ever showed that was of interest to me. There had been loads of Japanese stations earlier, but I had pretty well ignored them. I already have Japan confirmed.

Of course I kept an eye on the spotting screen, with my logging program watching for new ones, but many of the spots are called in by the multi-multi's who are perfectly legal to use packet spotting in terms of the contest rules, unlike the unassisted single-op entrants. But in the mean time a lot of rare stations never get called in, or by the time they do already have big pile-ups.

None of the Antarctic islands showed. I had checked twenty meters over, especially keeping a watch for any central African stations on that band, but the search went for naught. When twenty went flat, I packed it in and headed for the sack, deciding to let the contest gang fight over forty and eighty. It had been a hard week, and I wanted to start Saturday morning fresh.

Now it's a few minutes after 1300Z. I am seated at the rig, hot coffee near at hand, starting to tune twenty. If conditions are any good at all, most of the contest gang will have switched to ten and fifteen meters, looking for the multipliers from Europe, leaving only the multi-multi machines on the bottom of twenty. But in the meantime, there is still more frequency than the multi-multi CQ machines can fill, and hope for long path Middle-East DX, plus South-East Asia. I park the antenna South-West, so I can check the long path first, and start tuning up the band.

I quickly move out of the bottom twenty kilohertz of the band; it is a zoo, and there's virtually no hope of finding any weak signal DX. The loud signals obliterate my AVC system, and the key clicks of the CQ machines make weak signal copy impossible. But above around 14,020 kilohertz sanity begins to become apparent again, and I am able to copy weaker signals. I hear East Europeans, an LZ and a YO, plus a couple 4Ls. Their signals are S-5 to S-6, an indication that there is at least some propagation via the long path.

I hardly go further before I strike my first bit of luck; a small pile-up over someone. There, who ever it is is transmitting, "5NN21 5NN21 K". Hmm. Zone 21 is a Mid-East zone, which guarantees interest, at least on my part. Someone comes back, "R 5NN05 5NN05 73 BK". The DX station responds, "R TU QRZ DE HZ1HZ K". Hah! An HZ1 in Saudi Arabia. And, a good QSL'er as well, apparently, because I have seen his QSL on the walls of several of the local DX'ers shacks. Also, it would be a new one for me!

Needless to say, I make a call. I listen; nope, some one else got him. As I listen, I hear W9VNE drop in a tail-end call. Good! If that works, I'll try it too.

And it does. "73 NW W9VNE 5NN21 K". Even as I hear the HZ sending VNE's call, I am setting my VFO a hair above VNE's transmitting frequency. There, VNE is back. As soon as he has given his zone number to the HZ, I drop in my call, just once, "W9KNI", and wait. And Bang! I get him! "W9KNI R 5NN21 BK" I'm right back at him, "TU 5NN04 73". And there isn't anything slow about him either, "R TU QRZ HZ1HZ K". I grin from ear to ear, check to see that I have the log data correct, especially time and date, and tune on. They should all be so easy.

Needless to say, my continued tuning is done with particular fervor; but in due course it appears that there are no further Mid-East stations worthy of mention to chase. I swing the antenna further south to 180 degrees, in hopes that the transpolar long path might be in. After all, I can always use the odd VU4 or A51.

The path does prove to be open; almost immediately I come across a VU2 spraying out reports in an expert fashion. And, in terms of mileage and path difficulty, VU is always a good DX catch. But I have it confirmed, so I tune on. After nailing the HZ1, I am hot for more new ones to feed the log book. Still, the path has its interests. I hear EZ8DK calling CQ. Although I have three EZ's logged, I have yet to receive a QSL. I check my short list, and see that EZ8DK is not one of the ones that I have worked, so I zero him and call. I fail on the first call, losing to a GW3 station I can only detect in the background, but when the EZ8 goes QRZ, I get him. Within moments I am tuning again, still checking the polar long path.

The path seems in good shape, as I find a 4S7, several more VU's and the odd UN7 station, but I come across nothing else that I need. I turn the antenna into the North-West, to try my hand for South-East Asia, and keep turning the dial. In a contest, most DX'ers tune faster than they might in normal operation, because the normal events of weeks of activity are boiled down, as it were, into 48 hours. In non-contest circumstances a careful DX'er might watch a good open long path for an hour or more, while in a contest he tries to check that path in a few minutes, going back to it regularly to check. This is necessary partly because the normal clues a good DX'er watches, such as pile-ups over rare ones, tend to be obscured by contest conditions.

I move my way up the band again, using 14,020 as my starting point, rather than 14,000 as I would in normal times. The bottom of the band is simply too full of multi-multi CQ machines to be worth digging in between. Almost immediately, I come across a strong JA station, but with that peculiar flutter that occurs when only the stations with high large directive antennas are heard, while the stations running ground planes and normal dipoles are not to be found at all. But that's not surprising for this time of year; that path doesn't usually open as far north as Japan in the morning.

I find a YB5 with nice strength passing out reports; that's a good sign for the South-East Asians. And seven kilohertz above him 9V1YC is expertly dealing to a large following. I glance at the clock; it's nearly 1500 Zulu; better keep moving; I want to have a look at fifteen pretty soon for some Africans. Also, for us in the American Midwest, any chance of working SE Asia over the W6's and W7's is about gone; if we are to make hay on that path, we have to do it a bit earlier, before the West Coast gains a daylight propagation terminal. I finish tuning over twenty without further incident of note, turn the antenna East, and head for fifteen meters.

Fifteen turns out to be a madhouse, a hundred and fifty kilohertz of sheer bedlam. The band is open very nicely, and the bedlam suggests that the MUF never quite made it up to ten meters. But no matter, fifteen is a joy, loaded with loud European signals. The only trouble is, I don't really expect any of them to be from Albania. But, in any case, it's not Europeans I am after.

I start tuning the band, looking primarily for good Africans. The antenna is due east, which will give me good signals from Africa, but unfortunately the Europeans remain fairly strong. I try moving the antenna further to the South, while I listen to an ON4 calling CQ. His signal drops rather sharply as I move the antenna, and when I have the rotor at 110 degrees he is quite weak.

I quickly check bearings. TN8, for example, is 83 degrees from the mid-west. My 110 degree bearing is 27 degrees off from that, still plenty close. I probably would lose only a single dB in receiving strength on a TN8, but I drop the European signals twenty dB or more. And if I should get lucky enough to find a TN8, I can always quickly get the antenna back to the 83 degree bearing. And in the mean time a TN8 would be a lot easier to find with the European signals attenuated. I am making the presumption that a TN8 would likely be at least S7.

I start tuning again, hoping to find one of the "Terrible T's". (TL, TN, TR, TT, TU, TY and TZ, all generally rare.) Nor would I spurn the advances of a 5U7 or a 3X. My first quick pass turns up nothing. I am hoping to find some good Africans while fifteen is still hot to Europe, and the masses of contesters are still concentrating on them. Later in the afternoon, after the Europeans fade out, pile-ups on good Africans can assume monumental proportions. I would prefer to work my new ones now, ahead of the madding hordes.

The second time through the band, things get more interesting. As I tune across a loud W station, I suddenly realize that the call he just sent is TL8GI, one that I need badly. (Just like all the other countries I still need!) I listen; yes, there he is, S-8, too, "R 5NN36 K" and, with the other station's acknowledgement, he's gone. The other station calls CQ, telling me that the TL8 answered a contest CQ. I hang my VFO 300 hertz above the QSO frequency, and try calling the TL8, but to no avail. I call again; same luck. I'm in a panic.

I start tuning higher while I turn the antenna back to 80 degrees. I quickly find him again, about six kilohertz higher. I don't hear his call, but I hear him give a report, the "5NN36 5NN36", and I'm pretty sure it must be him. If nothing else, zone 36 is rather rare. When the other station clears, another station starts calling the TL8, confirming my suspicions, but the original station is calling QRZ DX, and is not about to surrender his frequency.

I quickly look a bit higher, and find a relatively clear frequency about 4 kilohertz higher. I figure the TL8 keeps moving higher after each QSO, so I try a fast CQ call. Someone comes back to me, and for a moment my heart jumps; the signal strength and speed seem correct, but it turns out to be a VP9. I give him a quick report, then call QRZ DX. Nothing. I move the receiver again, looking.

There, several stations calling him, about five kilohertz above my last transmit frequency. I already know he won't be sticking around; clearly this fellow does not care at all for pile-ups. Probably that's why the place is so rare. I quickly move up past them, and find another frequency that is not too busy six or seven kilohertz higher. I dump out another CQ call, and get two stations coming back.

I will never know who one station that called was, because the other is the TL8! The contact goes like lightning; "TL8GI R TNX 5NN04 5NN04 PSE UR QSL K". He responds, "R 5NN36 5NN36 QSL K5OA K5OA 73 SK". And that's all there is. But it's enough. Wow, another new country! And with a QSL manager, too! Contests sure are fun!

And that's how contests can go. The example with the TL8 is in fact representative of a fairly common situation in contests - rare DX stations that want to avoid pile-ups, but do want to get in on the action. Such stations are most often found in the CQ WW Contest, but it can happen in any contest, and the DX'er must be ready. Sometimes the DX station will respond to a quick call perhaps 300 hertz above the station he just worked, and, if possible, the DX'er should try this. If it is unsuccessful, as it was in the situation above, a planted CQ, as above, is the only hope, and, in fact, will work a high percentage of the time if done correctly.

Even for the DX'er with 300 countries and little hope of snagging a new one, DX contests offer exceptional opportunities to practice pile-up tactics, and to keep a sharp edge. And, if pile-up practice is the name of the game, the DX'er should consider competing barefoot, rather than with his big linear. It gives a bit of a handicap that is desirable for practice, not to mention making the neighbors grateful!

Contests are a great place to sharpen techniques such as the tail-end call, the delayed call, precision spotted calls etc., all for stations that are not needed for new ones. But always remember too, if you are practicing in a pile-up over a station that you don't need, you can't expect to work one you do need who may be just up the band. So if nothing else keep one eye on the spotting screen.

Contesting— A Gratuitous Editorial Addendum

The major DX contests as they are basically set up today are unfair, at least in the United States. (And for other large countries such as Asiatic Russia.) The reality is that if you are not living on the upper east coast you operate with a handicap that increases in severity the further you are away from the upper east coast. Extraordinary efforts from other parts of the United States are overwhelmed by ordinary efforts from east coast stations.

Why is this? – primarily because the upper east coast has an inordinate advantage in working Europe and the Middle East for QSO count, but especially for multipliers, especially on the 80 and 160 meter bands. Other parts of the country simply can not compete.

Look at the multi-multi contest scores after each contest – other parts of the country compete very well indeed on 40 through 10 meters – and get killed on 80 and 160.

What is worse is that the rules could be changed to make these contests much fairer, but that seems unlikely to happen, since the active contesters are the ones who make the rules. And the active contesters are the ones who see for themselves a real chance of winning. When questioning contesters about this, I am solemnly assured that the reason not to change the rules is that it would make existing records meaningless. I regard this explanation as having the moral value of a bucket of spit. I should note that the people who tell me this are all east coasters. But they run the contests.

Look at the results from contests of years ago. You see many fine operators from other parts of the country who have since disappeared. Why? I suggest it is because they realized that they could never win, were not interested in relocation to the upper east coast, and being competitive, went on to something else where they did have an equal chance of competing. Amateur radio and contesting are both the poorer for their loss.

How could the contest rules be changed to make them fair? There are numerous ways – handicaps based on distance offering an additional multiplier for low band QSO's would be one way. Another would be to make multipliers of say BY, JA, VK and ZL call areas for all bands.

There are surely other ways that make sense as well. Now that the European Union is more and more taking on the trappings of a single nation, for purposes of contesting we could simply delete all the country multipliers for member entities and treat the EU as a single country for multiplier purposes. That, right there, would go a very long way towards fixing the inequity, and at the same time recognize the new geopolitical reality. It would also greatly increase US activity in DX contests in areas other than the upper east coast. But that would be unfair, right? Because it would make old records meaningless.

Any contester worth his salt wants to win, or at least know that he has a reasonable expectation of winning if he competes hard. He deserves that chance. He doesn't get it.

We can do better.

12

Morning Call

I pull the chair up closer to the table, and snug the earphones tightly over my ears. I got lucky today; a fine frosty Wednesday in mid-December and me with an appointment ten minutes from home at nine AM. I've already bathed and dressed for the occasion, needing only to put my tie on for a last minute dash out the door, and now I can enjoy an hour of DX'ing.

I had chatted with my recently retired DX buddy K9MM last night, and he had told me about a fine long path opening into the Middle-East yesterday morning, with the ever elusive YI1BGD and an apparently legit 7O, both available on twenty meter SSB, and both relatively workable. I was surprised not to find my pillow wet from drooling in my dreams. Both of those countries are on my all-time needed list.

I check the spotting screen – nothing exciting, but long path DX is being spotted; nothing I need but the band at least is open. And the WWV propagation numbers are essentially identical to those of yesterday, so we should be good to go if either the YI or a 7O shows up.

I find a clear frequency around 14,200 and tune the rig up for sideband. I check the mike gain, adjusting it with a very brief test transmission, point the antenna southwest, and set the transceiver at 14,150. I pick up the two meter microphone and give John, K9MM a call. "K9MM, here's W9KNI."

"Good morning Bob. Here's K9MM."

"Hello John. Say, I'm going to be able to do a little hunting here for about an hour. Anything good on?"

"HZ1AB is coming through on fourteen one eighty-eight like a ton of bricks, but that's it so far. The band is certainly open."

"Good. Say, what can you tell me about that Seven Oscar?"

"His call was Seven Oscar One Kilo Portugal. He spoke decent English and seemed like he knew what he was doing. He has an OH manager. He was transmitting on about two-ten."

"OK, thanks. I'm looking for the YI also. Let me know if you hear anything."

"Roger, Bob. Good hunting."

"Thanks."

I put the two meter microphone down and begin a slow tune up the band. Almost immediately I come across a station speaking English with a crisp accent that is decidedly non-American, with a good 5X7 signal. "...name here is Clive, Canada, Lima, India, Victoria, England, Clive, and the QTH is sunny Perth, on the western shores of Australia. Back to you, Old Man. Whiskey Alpha Four Germany Tango Foxtrot, this is Victor Kilo Six Mexico Lima, over." I hardly need a VK, but it is nice to hear such good signals from Western Australia, indicating good band conditions, as John suggested. I keep tuning.

I hear a W5 calling CQ DX, speaking slowly and clearly into his mike. He is only S4 with definite backscatter, suggesting skip is long, and trouble with stateside interference will be minimal. I hope.

I listen to the Five finish his call, wanting to see what he dredges up. He signs, and two stations begin calling him. One is a good catch; a JY9. I strain to hear the other call, and manage to pull it out; it's an FR5, not as strong as the JY. That would be a nice catch too, but I have both FR5 and JY confirmed. The Five starts responding to the JY9, and I continue tuning higher up the band. As I do I think about the nuances of the morning twenty meter long path opening. The good news is that almost every station coming through on that path is likely to be fairly rare DX. The bad news is that the competition can be really fierce.

But, as with any DX band and opening, many operators simply tune for the pileup, never giving a look at the weaker signals leaking through on the band. Which gives the careful listener the opportunity to unearth goodies ahead of the pileup pounders…

I come across a loud signal, still almost two kilohertz away, and automatically start tuning him in. It proves to be a W4, who is obviously talking to an old acquaintance. He lets up for a moment, and I think I hear a weak signal back below him, a frequency I had crossed in tuning in the Four. I tune back to the other signal, but the W4 keeps talking, obliterating the weaker signal. I try turning on the narrow filter, but to no avail. I sharpen up the audio filter, and manage to figure out the station is calling CQ, and that there is a "W" in his call, as I catch a definite "Whiskey" in the phonetics. Then, the station quits his call, just as the W4 turns it back to the W2, unfortunately having a ragchew right in the middle of the DX portion of an open band.

I listen carefully, trying to see if anyone is calling the mystery station, but I hear nothing. Then, he begins his call again. "CQ..CQ..CQ North America, from 7Q7LW, Seven Quebec..." At that instant, the Four starts transmitting again, burying the 7Q7 as before. But a 7Q7! A rare one - and a potential new one for me, if I can nail him. As I swing the antenna a little more to the west, I listen carefully, trying to piece together bits of his signal in between the waves of RF emanating from the ragchewer, trying to hear when he ends his call. There, he signs... Hope no one else dug him out. I pause briefly; no one else seems to be calling him. I start my call, speaking very slowly, "Lima Whiskey, the Seven Lima Whiskey station, here's Whiskey Nine Kilowatt Norway Italy, Whiskey Nine Kilowatt Norway Italy, over." I don't want to attract attention to him until I'm sure I have him, so, even though I know his full call, I use only the suffix. If I'm fortunate enough to get the QSO, I'll give his full call.

I listen. For a brief moment the frequency is clear, and I hear my call coming back to me! All right! He is giving me a report, which I miss, then a momentary lull in the QRM lets me copy his name as Les. Then the QRM washes over him again and he is obliterated. A moment later, the QRM drops, just in time for me to copy "Whiskey Nine Kilo November Italy From Seven Quebec Seven Lima Whiskey, over."

I return, purposely speaking slowly. "Seven Que Seven Lima Whiskey, here's Whiskey Nine Kilo Norway Italy. OK, Les, thanks for the QSO. Copy is very difficult, due to stateside Que R Mexico. Copy would be much better down one and half kilohertz, Les. May I call you there? Over."

I listen. The frequency is a mess again, but I manage to pick out a "Roger," and I move down. I listen at the new frequency briefly. There is no one on the frequency, with only the usual bits of splatter. I call the 7Q7 again, then, holding my breath, listen. There he is, virtually in the clear, calling me...

Grinning widely, I come back to him, and the QSO turns into a brief but pleasant ragchew. He tells me he has been trying to work stateside stations but has had little luck on the morning long path. As we chat I key his call and frequency in on the spotting net, and tell that I have done so. He thanks me and several minutes later we sign clear. I finish my final transmission, then listen with a broad smile as the roof falls in on the frequency, with at least a dozen stations calling him. I smile. That Four with his rag chew in the middle of the DX band is in for a bit of trouble copying, no doubt. Tough. He belongs up high in the band. Not that he'll ever get the hint. Anyhow, I turn the antenna back into the Southwest again and begin tuning up the band again. Maybe I'll still find the YI...

The above episode points up a very important rule for the DX'er, true for the CW operator, but even more so for the SSB DX'er. ALWAYS strive to copy all weaker signals you tune across. On CW, the natural tendency when coming across a strong station is to tune that signal so that the note is comfortable, even though we might pass a weaker signal in the process. Our ear is pulled to the stronger signal. On SSB, that tendency is even greater.

In doing so, we ignore weaker signals the receiver passes over, signals that may well represent rare DX. It is a habit pattern that makes perfect sense in the normal world, where the person closer to you is more likely speaking to you than a person further away, which is why we have that instinctive pattern. But we are not dealing with the normal world. We are chasing DX.

Once the operator recognizes this natural tendency, it is not a difficult pattern to break, especially with practice. And indeed, understanding this pattern is crucial to successful DX'ing. Instead of allowing our attention to be "pulled" by stronger stations, we must learn to mentally filter the stronger stations out, not allowing them to distract us, while we try to derive intelligence from the weaker signal, be it on CW or SSB.

The natural tendency to devote our facilities to the stronger signal is all the more aided by putting the AGC or AVC on the "Slow" setting, which further helps to lock out the weak station when an adjacent strong station begins transmitting. Whenever you are tuning for DX, no matter on CW or SSB, ALWAYS use the AGC or AVC in the "fast" position.

Please. Go back and read the above four paragraphs again. And again. To understand them fully is a major key to successful DX'ing. Make a note on the back of a QSL and put it on your shack table. Listen for the weak ones, not the strong ones!

I glance at the clock. I still have the better part of an hour before I must leave for work. I set the receiver again on 14,150 and begin slowly tuning higher. A few kilohertz up I trip across the growl of a pile-up, each operator frantically calling. You can tell by their voices that they are excited. Within a moment I realize that whomever they are calling is transmitting somewhere else, as the stations calling seem to be spread out over the better part of ten kilohertz. If the DX station being called was working stations on frequency, everyone would be calling virtually dead zero with each other. Hah! There. Some one scored. "Roger, Rashid. Thanks for the contact. You're five by eight, five by eight, here in Alabama, Alabama is the QTH. The name here is Fred, Fox Romeo, Echo, Delta, Fred. Back to you. This is Whiskey Four November Kilo Italy, over."

Darn. The Four didn't give his contact's call. But the DX station's name is Rashid? That's a fairly common name in the Middle-East. Needless to say, my interest is whetted. But where is the station? I consider for a moment. I started tuning at 14,150 kHz., tuning higher up the band. Most DX stations working split have stations call them higher in frequency. Which means that if that is true here I must have tuned across the station already without noticing him.

But I was tuning carefully, so I really shouldn't have missed him. Of course there's no law that says he can't have callers transmitting below his frequency. Not common, but surely not impossible either. Hmm. Where am I. OK, fourteen one sixty. Say, maybe he's transmitting below one fifty. Yeah, that's a thought. I started tuning at one fifty, so he could be lower than that and working split. Yeah, that's the most likely possibility. I'll dip down and have a look...

I punch the synch button on the VFO to lock on W4NKI's frequency, then switch to the other VFO and push it down to 14,150. I decide to tune down from there, rather than going lower and then tuning back higher, as the DX station is more likely perched close to the edge of the Stateside phone allocation than to be way down in the band. I flip momentarily to the other VFO. I hear a lot of stations calling, so presumably the DX station is not transmitting yet. I tune very slowly, every few seconds flipping to the pileup area. Ah, there, the pile-up is dying down rapidly. I flip back to the other VFO and start tuning more quickly now, knowing that the DX station is very probably transmitting, working some one.

Wait, what's that? ... "Name here is Rashid, Rashid. And now the microphone to you, my friend. Kilowatt Four Canada Echo Fox from Yankee Kilo One Alpha Alpha, over." Hah! It's the legendary YK1AA, on 14,145. I should have known. Only one problem, though. His beautiful and distinctive QSL already hangs within a few feet of my disappointed eye.

I switch VFO's and start tuning higher up past the pile-up on the YK. Well, at least I know the long path into the Mid-East is certainly open. Rashid's signal proves it. A few kilohertz higher I trip over an LZ, weak, milking the long path as well. Just above him I hear a strong American voice, "located here in Dhahran. The handle here is Ken, Kilowatt England Norway, Ken..." OK, that's got to be HZ1AB. John, K9MM, did say he was coming through in good order. I keep turning the knob.

A ZC4 entertains a small but avid following. Not one I need but another good catch. I glance at the spotting screen – he has not been called in, so I do so. That might help another DX'er, and at the same time perhaps cut down competition elsewhere.

Several kilohertz above the ZC4 I hear a CQ, but as the operator signs his call QRM from stations calling the ZC4 wash over the frequency. By the time the QRM finishes, the frequency is quiet again. Could it have been the 7O or the YI? Wait, there he goes again. Uh, QRM again. Wait, now it's clearing. Oh, OK, right. Darn. It's an A9 in Bahrain. Again, a nice one, but another I don't need. I key him onto the spotting net as well.

I glance at the frequency readout; OK, I'm at 14,223. I'll tune up to 280, then go back down. Above 14,230 good DX stations tend to be much fewer, but on the other hand when you do find something good the pile-ups are less severe. Also, because of this, less experienced DX station operators willing to work "W" stations tend to hide higher up in the band hoping to avoid the massive pile-ups that can form in the lower part of the DX phone band, though once they get called in on the spotting net there is no hiding for them. The same is true in the CW bands as well, with rare DX sometimes being unearthed by the patient operator high up in the CW bands.

I keep moving slowly higher, watching every signal I hear. One thing nice about tuning for DX on SSB; the accents of the DX station can be a guide to their origin. Of course, one can get fooled that way; there are plenty of American and British operators operating from other countries, including some rare ones, and to pass over a signal because the accent is familiar can be a costly mistake.

As I muse, I keep tuning. And then, at 14,243, I come across him... "CQ CQ, Hallo CQ North America, Yemen calling, Seven Oscar One Kilo Portugal, Seven Oscar One Kilo Portugal, calling CQ..." My heart skips a beat. Good, clean S-6 signal, a bit of an accent. Hope no one hears him. Quickly I scan the gear. Yes, the antenna is dead on the long path into the Middle-East. I am set up for transceive operation on the main VFO. Mic gain where it belongs. There, he signs. I pause a moment, then hear another station begin calling, apparently having paused as well. The other station sounds fairly strong, but with a lot of back scatter. But now I should have the advantage. I know another station is calling, so if I make my call a few seconds longer longer than usual, I have a better chance of getting one clear call without QRM...

"Kilo Papa, here is W9KNI, Whiskey Nine Kilo November India, that's W9KNI, Whiskey Niner Kilowatt November India, W9KNI, Over."

I listen. Hah. Some advantage... "Your five by eight, five by..." Whoever did get him, it sure wasn't me. The 7O is already handing out a report. That's the disadvantage of waiting a brief interval before beginning your call. If another station starts calling before you do, there is a good chance that the DX operator will "lock" his ears on the first station he hears, ignoring other callers that start their call moments later. And that is equally true on both CW and SSB... "Name here is Ahmed, Ahmed. Please QSL via my manager, Alpha Papa Two Japan Kilo, that's Alpha Papa Two Japan Kilo. Over to you, my friend, N8GZ from 7O1KP, Over."

N8GZ. Huh. Well, at least I got beaten out by one of the old pro's of DX'ing. He comes back, and I listen. I try to figure if I should have done anything different. Other than not pausing, which was a gamble anyhow, I can't think what it would be. Except maybe keep my call shorter; obviously N8GZ made his call short. All I can do right now is hope no one else finds the 7O before I get through. I listen.

The 7O is soon signing clear. The instant he stops, I call, this time signing only my call. No need to use his call at all now that he knows he's being heard, "Whiskey Nine Kilo Norway Italy, W9KNI, over." Darn. I hear at least three stations signing their calls. But the 7O is in there. Maybe I got him?

"..report is 5 and 7, my name is Ahmed, Ahmed, back to you, Washington Three Hotel Hotel Germany, this is 7O1KP, Over." Huh. Not good. Being beaten out by a three when the path should be favoring me. But maybe nine land will get a peak a bit later. I glance at my watch. Oops. I've got ten minutes to go before I have to leave. I notice a sinking feeling in my stomach.

W3HHG finishes quickly, and I call again, again being brief. I listen, only to hear more stations calling. There, the 7O is coming back to someone, but the call is buried in the QRM... There, he's turning it back. OK, it's Ray, K9RS. One of the serious DX'ers a suburb away. So the nines are starting to make it through. Great. And me with seven or eight minutes left, and a pileup growing by the minute.

K9RS makes his QSO short, and again I call. I listen. The frequency has turned into a disaster area. I think I can hear the 7O, so I do not make another call. He almost finishes his transmission before the pileup of stations still calling him begins to thin out, but one last gasp call from some idiot covers the call of the station he turns it over to. The frequency is silent for a moment. Could it have been me? No. There, he's calling a 4. I listen. Yes, it's N4RR. Wait. He's in western Illinois; yes, I met him at the W9DXCC Banquet. So maybe we're getting our peak now.

"...Name is Ahmed, Ahmed. Please QSL to Alpha Papa Two Japan Kilo. I shall QRT after this QSO; the QRM is becoming very bad. Over to you, my friend. N4RR, this is 7O1KP, over." The QSO is soon over.

I wait another minute; stations are calling madly, but apparently the 7O meant what he said. He is not heard again. I put my tie on as I listen to the frantic calls, then turn the rig off and head for the garage. As I drive off, I realize that I am secretly relieved. By the time the 7O went QRT, it was plainly obvious to me that my chances of getting through in the pileup were slim at best. There were too many stations on the frequency, and if the 7O continued operating transceive the situation would have become hopelessly out of control; indeed it was already at that point. I leave the house in peace, knowing I'm not missing a chance to put him in the log. It wouldn't be much of a meeting with me sitting there thinking of all the people getting through to the 7O while I'm locked up in a conference room.

And I learned a lot about his operating. He dislikes pileups, apparently lacks either the equipment or the interest in operating split frequency, operates higher in the band, and locks his attention on the first station he hears. I've noted these points in the margin of my logbook, not that I'll easily forget them. And I have a good idea of what his voice sounds like, in case I hear him again in mid-transmission.

What I have learned doesn't sound like much, but it will be of considerable value in hunting him again, and I'll be ready to move quickly when I do find him. Assuming he is for real, as everyone seems to think he is, I'll certainly be putting in the time hunting for him. After all, what choice do I have? I'm a DX'er.

13

Summary, Section One

At this point you have finished Section One of this book. If you started out as a novice DX'er, or a DX'er trying to improve your effectiveness, you will have learned a great deal, especially if you have been reading this book a chapter at a time. And, your country worked total should be considerably improved.

By now, you will have figured out several implicit lessons "written between the lines." The most important is that successful DX'ing involves skill sets and methodologies that can be learned. Another of course is that the more time you put in listening, the more countries you are going to work. But please pay attention to an important caution – remember, you have the rest of your life to work DX. But obligations to family and job come first. DX'ing can become an overpowering addiction – don't let that happen to you.

Another lesson is that a good DX'er is always learning; learning about propagation, about radio, about people in other parts of the world, pile-up techniques, and more. And that should be a major part of the joy of the hunt.

The purpose of the first part of the book was to teach the fundamental skills that the successful DX'er should possess. Certainly, you will meet DX'ers with high country totals who lack many of the basic skills; it can be done. But it is a lot easier for a skilled operator.

Section II of this book, which you are about to begin, is based on the belief that the reader is pretty well in command of the skills of DX'ing, and has worked something over two hundred countries. Finding the new ones gets harder and harder, with the time between DX'peditions to otherwise inactive countries still needed longer and longer. Now, we start the hunt for the elusive ones that are on the air, but rarely if ever found out in the open dealing with the pile-ups.

We will discuss other aspects of DX'ing besides operating, such as QSL'ing, towers and tower ordinances, the equipment philosophy of the DX'er, and TVI. We will discuss DX bulletins, buddy systems, HF DX nets and two meter DX nets. And a very important but brief chapter will cover DX'ing morality.

And, there will be a very short Section III, advice for the DX'er who has 300 countries, has worked everything that's on the air, and is waiting for the DX'peditions he needs to make it to the Honor Roll - the goal of the DX'er.

Good DX'ing!

14

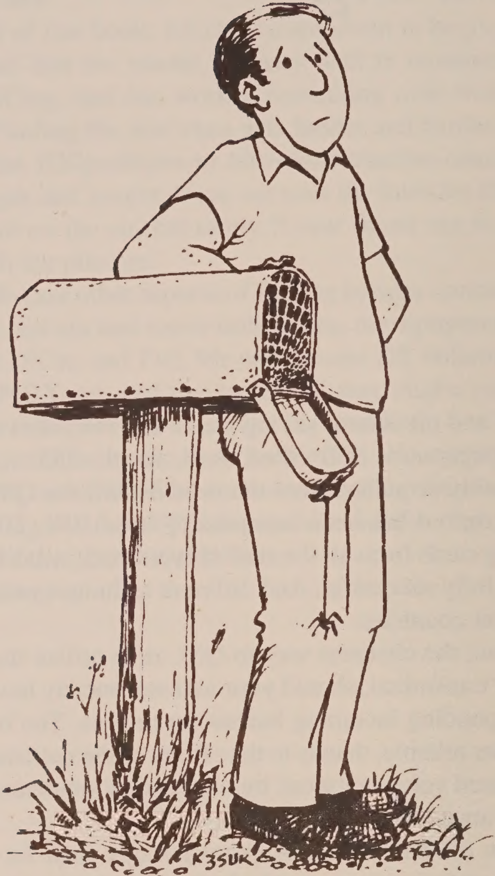
QSL'ing

The old and oft abused saying has it that the job is never done until the paperwork is finished. And, for the DX'er, a country can't be safely scratched from the need list 'till the QSL is on the wall; and indeed has been accepted by the ARRL DXCC desk. But getting cards from all the stations you work is a difficult task; one never fully successful. And different techniques must be used for different countries.

Of course, the cheapest way to QSL is to utilize the outgoing bureau for transmittal, should your national society have one, and the corresponding incoming bureau for returns. The bureau system is rather reliable, thanks to the efforts of the national societies and dedicated volunteer work by our brother amateurs, and even some non-amateurs.

However, the bureau can be excruciatingly slow for the DX'er intent on running up a score. And, the considerable delays often imposed by the bureau system leave the DX'er questioning if the DX station he worked in some certain needed country is genuine, and if so, whether or not he QSL's at all. After two or three years without response, the DX'er does begin to wonder.

Further, not all DX countries have bureaus, and in some other cases there is a bureau but it only serves members of the club or


K3SUK

society that run it, with the very real possibility that the station you need a card from is not served by that bureau.

Often, the rarer DX station uses the services of a QSL manager, who assumes the responsibility of exchanging QSL's with all applicants in the name of the DX station after he has received the DX station's log books.

The route generally used in QSL'ing for a new country is the direct QSL, sent via air or surface mail, and with or without provision for return postage in the form of currency, International Reply Coupons or a self addressed stamped envelope (commonly referred to as an SASE).

Before we go further about getting QSL's from other stations, let's discuss your own QSL card. There are many QSL printers offering semi-custom QSL's for prices that range from exceptionally reasonable to outrageous. And, quality is not necessarily a function of price. The card should be attractive, easy to read, and should have the QSO data on the same side as your callsign. This may sound unnecessary, but there is little question that you will get more cards back with your call made out wrong if you have the data on the opposite side from your callsign. And receiving a card with your call filled out wrong from a country you need makes for a very unhappy day. Also, cards with all the data on one side are cheaper.

If you live in an area with any distinctive feature, it is nice to have a QSL reflecting this if the expense is not too high. Anything you can do on your QSL to make it more interesting and noticeable in a favorable way will help your QSL returns from the rare ones. But keep it in good taste! Among other things, remember that some amateurs in third world countries can only dream of the latest equipment – your QSL will be more effective if it does not emphasize wealth. Many DX'ers keep two different QSL's in stock – a simple and inexpensive one for bureau requests and that sort of thing, and a much nicer (and more expensive) card for special contacts, be they new countries or meant as souvenirs of an especially nice QSO.

Sometimes unintended consequences can arise from a QSL card. The author has certain knowledge of a Mongolian amateur who had his license suspended for an extended period – because a DX'er sent him a QSL with a picture of a nude woman emblazoned across the front. The Mongolian postal authorities, who also were in charge of licensing, were not amused, considering the received QSL to be pornographic, and for that reason he was QRT for over two years.

When QSL'ing any station, exercise a little quality control on your end! Be sure the DX station's call is filled out properly. Be very careful that the log data entered on the QSL is correct, especially the date and time. Remember, in most locations at least part of the day has a different GMT date from your local date. Your chances of getting a QSL back decrease very rapidly if the time or date is wrong, especially if the QSO was made in a contest or with a DX'pedition. And if you really want to ruin your chances of getting a QSL, use local time on your QSL rather than GMT! If you choose to send out your QSL's via the outgoing bureau of your society, you will need to follow their instructions on transmittal of the cards.

As referenced above, many of the rarer DX stations utilize QSL managers to handle their QSL's. Often, the managers are American hams, making the obtaining of a QSL fast, easy and cheap for other Americans.

If you are sending your QSL to a manager for a new station, you should remember first of all that the manager himself is almost invariably a volunteer, and it is certainly in your interest to make his job as easy as possible. Always be sure to include a self addressed stamped envelope with your QSL, or, if the appropriate stamp is not available, International Reply Coupons (IRC's) or "greenstamps" – US dollar bills. On the back flap of your return envelope, you should write in complete QSO information - both your call sign and that of the DX station worked, date, time, mode, frequency and reports exchanged. This will help the manager sort the cards while he waits for the logs from the DX station.

Sometimes DX stations tell the whole world that some certain station is their manager and then neglect to send their logs to their manager. The great majority of managers are very responsible to the job, but if the DX stations fails to send the logs in, the manager can catch a lot of grief for a situation for which he has no control at all. Don't add to it! If, after no response for an extended period, you send a polite note with an SASE to the manager asking confirmation that he is holding your card, you will surely get a fast answer. But remember, amateur radio is the manager's hobby too. Don't ruin it for him.

Often, one reason managers handle QSL's is that they are stamp collectors. It never hurts to include a few unusual stamps, domestic or foreign, with your QSL to a manager. Another thought to remember is that very often the manager pays for the QSL printing for the DX station, not to mention other incidental expenses. The occasional dollar slipped in the envelope to help defray printing expenses along with a note of thanks will surely not go unnoticed.

As referenced above, many managers are American. Non-American stations chasing DX who utilize the services of American QSL managers on a regular basis can effect a substantial saving on return postage by getting an American amateur to purchase the appropriate U. S. postage stamps and mailing them to the non-American DX'er.

The aggressive DX'er typically sends his QSL's via air, with provision for return postage. Without careful attention to several details, this can be a frustrating and expensive exercise. The first problem, one unrecognized by many American DX'ers, is that often QSL's from DX stations are metric in size, and larger than the standard U. S. format. This means that the DX QSL may not fit the envelope that the American DX'er supplies.

The solution to this is to have a friendly overseas amateur send a packet of metric sized QSL envelopes. There are some rather nice blue air mail envelopes offered in most metric standard countries that will serve very nicely; and they are opaqued as well to help discourage theft. Alternately, such envelopes may be purchased from domestic suppliers.

Which brings up the next major problem in QSL'ing - theft in the mails. Fortunately, the postal service in the majority of countries is reasonably honest, although there are certain countries where the only thing certain is that the mail will be rifled for any possible item of value. In any case, the wisest policy is to conceal return postage or any suggestion that there is return postage, money or IRC's from easy view.

This sounds easy. It is not. First, make up a dummy mailing to a DX station in your normal manner, using a blank QSL and an unsealed envelope. Now, take the mailing out into the noon sun, and hold it up. Remember that the sun in some parts of the world may be brighter. If you see any hint of an IRC, or even of a return envelope, you are already in trouble. Now, if you do pass that test, tap the side of the envelope sharply on a table, so that the internal contents of the envelope shift. Hold it up to the light again. Still OK?

There are several techniques that will help obscure the contents of the envelope. One is to be sure that all the contents of the envelope stay together. This can be done by taping things together, using small pieces of masking tape or removable plastic tape which can be removed without damaging the contents. Try pieces perhaps a quarter inch by a half inch (6X12mm). First, fold your return envelope, and lay it on the back of the QSL, being sure that it lies within the edges of the QSL card. If you are including IRC's, lay them over the folded envelope, blue side up, slightly staggered. Now, lay one of the pieces of masking tape across the corners of the IRC's, so that they are gently attached to the QSL, trapping the envelope beneath them.

The IRC's will help hide the return envelope, which otherwise might suggest to the potential thief the idea that there may be some form of return postage worth stealing. The tape pieces will keep things from drifting when tapped, making detection by the thief harder. The density of the whole packet inside the envelope will make it impossible to determine the contents.

There are variations that can be used to add security to your mail. One is to procure some brown or black plastic film and cut out pieces of it to opaque out the walls of the envelope. Another is to use carbon paper as a shield. It can be messy, but it is extremely black! But remember, getting too clever may in turn raise the interest of the thief.

There are other tricks. For example, it seems to be nearly impossible to mail QSL's with IRC's or green stamps to Reunion Island from the States and have them get through. Apparently, while the mail is en route, at some point it is all opened. The trick there is to send the mail with a French address. In other words, use the complete Reunion address, especially including the postal code, and including the word "Reunion", but NOT the word "Island". Then, on the bottom line, write "France". The American post office then sends the mail to France, rather than directly to Reunion as it would otherwise. Reunion is a French department, and the mail is then forwarded to Reunion as domestic mail, which has a far better chance of making it through intact than it would if mailed directly to Reunion from the States. And it may well get there faster besides.

The next question is how to make provision for the return postage so that the DX station can send you his coveted QSL, hopefully via air mail. From the States, two methods are usually used, IRC's and "green stamps", US dollar bills.

IRC's are available at any post office, and are good for the return of a letter of minimum weight via airmail from any country in the International Postal Union – which is virtually everywhere. In days gone by, a US dollar was almost always enough, converted to the local currency, to pay for return airmail. But times change, and now more often than not $2 is required. Also, - and this is important - in some countries it is illegal to possess foreign currency, especially dollars. This is usually not because a country fears that its citizens are being subverted, but rather because many countries have a great need for hard currencies, and do not allow their citizens to privately hold foreign currencies.

In any case, and whatever the reason, in certain countries it is illegal, and often these are countries where mails are routinely opened and checked for contraband. If there is any question at all, don't send currency! You surely would not want to risk sending a ham to jail, or get him in trouble. At the least, you greatly endanger chances of getting a QSL you need. If there is any question at all about sending currency, ask the DX station. And if in doubt, DON'T DO IT.

A trick in use by a few DX'ers and that deserves more attention is to send the DX station a pre-addressed label rather than an envelope. Then, the DX station can return the QSL as an airmail post card at a lower postage rate, rather than the envelope rate. Also, your envelope to the DX station is thinner and less likely to arouse interest. It is also true that in countries without entirely reliable postal systems that a post card is considered to be of no interest and is sent on, whereas anything in an envelope is set aside to see if there is anything worth stealing inside.

One barrier to obtaining QSL's from any DX station can be determining the correct route for the card, even though you are willing to send your card via air mail with provision for return postage. Under normal circumstances, a little listening, or a direct question to the DX station will reveal the route the DX station prefers for a QSL, be it a QSL manager or his direct address, or an indication that "QRZ" ("www.qrz.com" address) is correct.

However, sometimes the desired information just is not available from the DX station, for example in a contest situation, and other means of determining the route must be found. There are a number of possible routes. There are many internet resources that are of great help in such situations, as well as the various DX Bulletins. You might be amazed at what you can find by going to an internet search engine and typing in the call of the desired station.

However, you will discover that some QSL routes result in your QSL being returned undelivered. Other routes seem to be QSL gobblers, with never a return, and no hint of whether your QSL ever got to the DX station. And, some DX stations just don't QSL at all, while others don't QSL reliably.

It is important to keep adequate records in QSL'ing. If one route does not work after a reasonable period, something else must be tried. If you keep logs on paper, be sure to make notation in your log book of the date the QSL was sent and the route or address used. The date of the QSO should be noted in your need list, so that you can access the log data quickly.

Of course, if you are using a logging program, they generally keep track of that information for you.

If you want the QSL from a particular station badly enough, there is usually some way to pry one loose. First, of course, you should have some reasonable idea that the DX station has actually received your QSL and is not responding before you start trying other techniques. In some cases it is possible to find some one willing to hand deliver a QSL; a friend of a friend, or a willing tourist, for example. In other places, this is impossible.

What should be avoided is making too strong an overture to the DX station. If you keep sending dollars to some non-cooperative DX station, for example, in fact you give him no reason to QSL, because once he does, he knows that you will stop sending him dollars.

Another possibility is that the DX station does not have any QSL's. In this case, you should make out a QSL on an index card or similar, filling it out completely, but leaving a place for the DX station to sign it. Such a card, when signed by the DX operator, will be accepted by the DXCC department if they believe the signature to be genuine.

Sending your return envelope with proper mint postage stamps of the DX station's country is a good idea when possible. Such stamps can often be purchased from a stamp dealer, or a DX'ers stamp service. Remember, however, that such moves are generally reserved for hard case situations, and often in such cases nothing will work. But if you can't find a more cooperative station in the same country to work, you have little choice but to pursue these avenues.

QSL'ing is as much a part of DX'ing as tuning the receiver is, if your goal is getting to the Honor Roll. Careful and prompt transmittal of the card after the QSO will help you towards that goal. And the thrill of getting a new card in the mail is almost as much fun as working the station. And though you are convinced otherwise, it is very unlikely that your mailman is stealing your QSL's for the stamps!

Note: It seems that electronic – internet – confirmations of QSO's is a coming thing. At this moment, none of the major operating awards accept such QSL's, but there is considerable pressure to do so and doubtless in future some system of electronic QSL's will be accepted for awards.

But it will always be desirable to have the good ones on the wall or in your files.

Also, there are some useful resources available to the DX'er in the way of QSL manager lists, mail order businesses supplying air mail envelopes, DX stamps etc. Such businesses seem to change frequently so are not listed here – but a search of the internet using a search engine will almost surely bring quick results.

15

Night Call

The phone rang in the darkness. "Huh," I muttered, or something to that effect. Bleary-eyed, I looked at the clock, just as the second ring started. It read back to me its dreadful message "1:35." In the morning. I sat up sharply. Phone calls at one thirty in the morning mean one of two things. A relative or close friend has died - or there is a new one on!

"Hello?"

"Bob! Get on quick. 3Y2LA is on from Bouvet. He's on fourteen one four five point six, listening one-sixty and up. He's S-6 out here." It was my friend Jim in the Los Angeles area, which is what he meant about "out here."

"Right. But is he real? There were no reports or announcements..."

"Yeah. But he looks pretty good. Says the operation is only going to be on for twenty four to thirty hours. Says he is part of a group of scientists going from Norway to the Antarctic for some geological research. He said their ship is a Norwegian Navy ship, and that they had planned to go near Bouvet, and if the weather was good land a small party using the ship's helicopter. But they weren't sure, so they didn't make any announcements, and he just popped up. By the way, he's not a super operator."

"OK. I'm on my way. I'll call you a little later. Thanks."

"Roger."

Within moments, I am bundled in my bathrobe and slippers, and padding quickly down the stairs towards the shack. Bouvet! A frozen speck of land, a lonely mountain really, sticking out of the frozen far South Atlantic. Operations from Bouvet have been exceedingly rare over the years, due to its isolation and the difficulties of getting there. I have seen photos of the island; a starkly beautiful place that ran shivers down my spine. And one I need; a really tough one, one for which no realistic hope of a DX'pedition had surfaced in years.

Twenty four to thirty hours. On SSB. With an operator not exactly world- class. And me with only a moderately competitive signal in the SSB pileups. My stomach twinged. I turn the main power switch on, turn the linear switch on, then look at my great circle map for Bouvet. It does not show on my mini-great circle map. The computer is still booting, so I can't get the logging program going yet. I dial the rotor preset to 135 degrees; S.E., knowing that is close enough to get me in the ballpark. It has a long way to turn, coming round from being pointed into the southwest Pacific from last night. Ughh – that was only two hours ago.

I put the headphones and tune the transceiver to 14,145.6. Almost immediately I hear him; perhaps S-4, wait, there, he's lifting a bit more as the antenna turns. Yes, there, speaking English with a Scandinavian accent. "Roger, QSL my friend. Thanks and 73. QRZ please, listening fourteen one sixty and up, this is Three Yankee Two Lima Alpha now listening." Oh boy. If he is going to go through all that rigmarole, this could be a long night. My stomach rolls again as the shack phone rings.

It's Jim again. "Bob. I just got him. I was transmitting on one-sixty-six. He generally seems to be moving up the band about a kilohertz each contact, but sometimes he doesn't move, and sometimes he seems to just jerk his receiver dial and land anywhere."

"OK, Congratulations. Hope he's real. And I hope I get him."

"Yeah. Good luck. The pile-up is growing pretty fast."

"Thanks Jim." I glance over - the spotting screen has come to life. Yes – there are four spots on him showing on the screen.

I put the phone on the hook, and set the linear tuning from the numbers chart for 14,150. I turn the speech processor on, and move the microphone to the center of the table. I'm as ready as I'm going to be. I listen. Yes, he's on. "Kilowatt Five Foxtrot Alpha, OK, Old Man, I have you now, you are five and six, five and six. 73 now. QRZ, listening fourteen one sixty and up, this is Three Yankee Two Lima Alpha listening." I set my transmit frequency on 167 and call. Even with Jim's information, I'm probably not very close to the last station he worked, but you have to start somewhere. The needles on the linear and the output meter all flicker as desired, indicating that everything is working properly.

I listen. I hear nothing for three or four seconds, then he comes back. "The Kilowatt Four station, go again please." Mentally, I groan. I know from sad experience that a call that selective means that everyone in the pileup will continue calling, regardless of the prefix or number in his call. The 3Y would have been a lot better to just keep listening until he got a complete call, even if from some one else. There, he transmits. "Sorry, the K4, I can not copy you. QRZ? This is 3Y2LA, listening fourteen two hundred and up, over."

I call again, still really with no idea of what frequency to be on. I listen. There. He's coming back to some one. "W6 Canada Tokyo, here's 3Y2LA. You are five and five, five and five. Do you copy? Here is 3Y2LA, over."

I punch the transceiver switch and listen using the other VFO. Frantically, I tune, looking for the six. Yes, there, I hear a station speaking slowly... "You are also five by five, five by five, thanks for the new one, QSL? 3Y2LA from W6CT." I flip to the other VFO, and as the 3Y2 comes back to the six, I move my transmit frequency a kilohertz higher than the W6's frequency..

"Roger, thank you for the QSO. QSL via the Norwegian Radio Relay League. QRZ now, listening fourteen one fifty up..."

I call again, now with greater confidence that I am on a frequency where I have a good chance of a QSO. I listen. I hear the last of a W6's call on the 3Y2's frequency, some poor fellow who got his switch position wrong. Immediately, several self-appointed policemen respond with the usual "gentle" manners of the twenty meter DX fraternity. Which all adds up to obliterating the 3Y2's response. I hear him for a few moments, but copy is hopeless. But then the frequency finally clears, just in time for me to hear, "The Whiskey Nine Norway India station, please go ahead, from 3Y2LA, over."

I grab the mike. "3Y2LA, here's Whiskey Nine Kilowatt Norway India, that's Kilowatt Norway India, W9KNI. Thank you old man. You are five by five, five by five, QSL? From Whiskey Nine Kilowatt Norway India, W9KNI, over." I listen, anxious to hear if he got my call correctly. Ughggh. His frequency is covered by two real jerks yelling at someone else, inviting him to remove various parts of the unfortunate's anatomy from the frequency. After about twenty seconds of this, they quiet down, just in time for me to hear the 3Y2 going QRZ.

I note the time down in the log, then enter the rest of the QSO, along with a big question mark that already is causing an ache in my stomach. The age-old nightmare of the DX'er runs through my mind. Am I in the log?

I try to think out the situation rationally. He DID have the second and third letters of my call correctly. But then, it was some seconds after I finished my transmission before I heard the QRZ; I could not tell if the timing was right, thanks to those idiots. Too, the Three Yankee had showed no patience in trying to dig out a complete call earlier when he dumped the Kilo Four that had called.

I decide to call Jim; it's already after midnight in California, but perhaps he's still up. I hope so... The phone rings once, and Jim is on the line. "Jim! Glad you are still up. Did you hear my QSO?"

"Only part. One of those clowns on the 3Y's frequency is a local, and he really clobbered the 3Y here."

"Tell me about it. But did you hear if he ever got my call correctly?"

"No, sure didn't. I knew that's what you were calling about. But I just can't tell you for sure. You might be OK but I just don't know."

"Ughhh. That was probably my easy shot."

"Yeah. Oh. Just before I called you, he gave some guy hell for trying to get a second QSO. Not that I blame the 3Y; the station he was chewing out had had a clean, clear QSO ten minutes before. Still, maybe he had a burst of local QRN or something and never heard the end of it. And it's not as if the 3Y2 is that super about picking out calls and making sure he's got it right."

"Yup. Do you think he's real?"

"It looks pretty good. One of the locals just said on two meters that his buddy in England emailed him a message saying that he had gotten news from Norway that a Bouvet operation was a real possibility, and that it was to be by a non-DX oriented amateur, and would be for a maximum of 36 hours, maybe less, and primarily on 20 meters."

"So it looks to be real then."

"Yeah."

"How long do you think they have been on?"

"Not more than about twenty minutes. I tripped over the fellow just as I was closing down to go to bed."

"What do you think I ought to do?"

"Log the one you got, wait an hour, then try like crazy for an insurance QSO. Then write a letter with your QSL explaining why you might be in the log twice. 'Cuz I don't think you'll get a shot on another band."

"Wonderful. But you're right. That's what I'm going to have to do."

"You got to work tomorrow? I mean today?"

"I did. But I'm going to take a vacation day unless I get lucky. I really need this one."

"Right. Good luck."

"OK, and congratulations on your QSO."

"Yeah. It was a real solid one. Good night."

I hang up with Jim, then get on the phone calling the local DX'ers who need Bouvet. The list is long. When I have finished that, I go get a cup of coffee, then return to listen before my self imposed quiet hour sentence is finished.

The situation has deteriorated. There are a number of stations around the 3Y's frequency, offering comments, telling each other to QRT, using various combinations of less polite words, etc. One station plaintively asks the world at large if someone can't take a list. That becomes the occasion of a number of DX'ers expressing their opinion of lists. The 3Y, apparently oblivious to all the traffic on his frequency, goes along placidly, leaving behind him what must undoubtedly be a long trail of broken QSO's.

I go for a second cup of coffee and return. I try to study the fellow's operating tactics, such as they are, in hopes of learning something that will give me an edge. But instead, my stomach sinks further as I listen, as the frequency and the operation get more and more out of control. And, as the hour gets later and I sit there sipping my coffee, I notice that the 3Y's signal is fading slowly.

It would hardly be fair to blame the 3Y operator for being a poor operator. The trip to Bouvet was not intended as a DX'pedition at all, and we DX'ers should consider ourselves fortunate that anyone at all got on. Besides, if all DX stations operated like OH2BH or DJ6SI or the like, all DX'ers would be on the honor roll if they just hung around long enough. But working this fellow for a solid QSO under the circumstances is going to be a nerve racking experience at best.

The situation on the 3Y's frequency finally begins to clear up. Even the jammer sending dits with the old bug gives up, and the 3Y becomes a lot more copiable. But now his signal is S-2 at best, with QSB taking some of his transmissions into the noise. Not only that, but skip seems to have gotten longer, and I can find very few stations calling him. Even so, Jim's comments about the 3Y's operating habits seem dead accurate.

The local DX'ers in the mean time have been busy calling the 3Y, with mixed results. Several of the big guns get through, most don't. Two meters is quiet except for the occasional call of the transmit frequency of some station in QSO with the 3Y; such spotting is the usual duty for those already in the log.

But the calls become fewer and fewer as the skip goes out. Then, the 3Y's signal improves slightly for a few minutes, just as he works a European, an LA station. He makes an announcement... "Gentlemen, the band now seems open to Europe, so I shall now work only European stations for the next few hours. Thank you to all the stations in North America. QRZ Europe, listening 14,150 and up, from 3Y2LA."

At least the fellow is a gentleman, and saves me needless grinding on the electric power meter. I empty my coffee cup, ask on two meters for a phone call from anyone if he becomes available again, and head for bed, first setting the alarm clock for 6 AM...

I lay in the bed, the excitement of the situation and the effect of the coffee denying me my sleep. I review the recent events in my mind. Clearly, I should have asked the 3Y2 to QSL my call during my transmission. But then he was giving both calls on his final transmission to me, or I must presume that he did; he did with every other station that he worked. Again, I THINK I worked him, but I can not be positive in my own mind. Was there anything else I could have done under the circumstances? Other than asking for a confirmation of my call, I can think of nothing.

A thought occurs. I get out of bed and go back to the rig. I check out the callsign database on one of the nets – is there a W9NI? The answer is swift – there is indeed. Is he a DX'er? I check the DXCC records on the ARRL web site. Nada – nothing. Not that that means anything at all. So maybe there really was a W9NI in the pile-up? No way of knowing for sure – but it seems unlikely. I find the 3Y again – he is a bit stronger, and only working Europeans, stopping once to give a VE what for for continuing to call when he only wants Europeans.

I go back to bed, but am no nearer sleep than I was earlier.

I hate the thought of having to go for an insurance QSO on the same band; it is considered greedy by many, and some DX'peditions refuse to QSL stations that make a habit of that. But I really don't see that I have any choice. If I ever get another shot at him, I doubt there's any way he would remember my call anyway, unless he is using a computer AND I'm in the log correctly, in which case I can write a letter of fervent apology, and explain the circumstances. But the thought of trying to snag him out of what will surely be a monstrous pile-up churns my stomach. I can only pray that I'm already in the log.

It seems only a minute later that the alarm goes off. I must have managed to fall asleep after all. I rise, not feeling terribly terrific, and pad back down to the shack.

"Any sign of the 3Y? From W9KNI."

"Good morning Bob. Here's K9RHY. Yeah, he's still on, same frequency. But he's been doing nothing but work Europeans. He darn near faded out for a while, but now he's S-5 again. But thanks for that call last night. That surely was a goody for me."

"Glad you got him, Bob. But what are you doing up so early? You had a good solid QSO."

"I was too excited to sleep, so I've been doing homework in front of the rig. I'm going to go shower in a few minutes and get going."

"OK. How's the fellow doing?"

"Maybe a bit better. I think he's learning a bit. The QSO's are shorter now, and he's trying to make a better effort to see that he has a call sign correctly."

"OK, good. Well, I think I'll go get a cup of coffee, then come start my vigil again."

"Roger. I'll wait till you're back and watch him, then I'm out of here."

"Thanks. K9RHY from W9KNI."

A few minutes later I begin my vigil. The 3Y2 is good copy in spite of occasional catcalls and unkind comments on his frequency. But, as before, he ignores them, and steadily plows on. I do notice that at times the European stations seem to be having trouble copying him, but he works patiently and seems to be making a determined effort to get solid QSOs. My respect for the operator grows. He may be new to the game, but he seems to be learning, and is clearly trying to do the very best job he can. I keep listening.

After some number of QSO's, I hear him suddenly start working a station in another language; although I do not understand it, I recognize it as a Scandinavian tongue, doubtless either Norwegian or Swedish. Which of course makes sense. After several exchanges, he switches back to English. "This is 3Y2LA, now going QRT for a commercial schedule. I shall be back on this frequency in perhaps 20 minutes. Thank you. 3Y2LA QRT."

I glance at my watch; it's 7:13. Hmm. Strange time for a commercial schedule? One would expect such a schedule to come on the hour, or at least on the half hour. And he promises to be back in about 20 minutes. Interesting. And he just worked a station in Norwegian before he QRT'd. Hmmm. Betcha what he really is doing is sneaking off somewhere and is working a bunch of Norwegians on some secret frequency. That does make sense. What to do? If I could find the frequency, maybe I could get in on the easy shot. Yeah. I leave one VFO on the 3Y's frequency, and quickly start tuning the band with the other. I decide to forget CW, and start tuning from 14,100 up...

Although I tune very carefully, both with the antenna on Bouvet, and then on Europe, I come up with nothing. The tuning turned into a tough assignment; if my thesis is correct, what I am looking for are stations making what are presumably brief transmissions in Norwegian, a language I am unfamiliar with. To do so means that one has to tune especially slowly. I did pop the bandwidth to the eight kilohertz position to give me more of an idea of what was on, but to no avail.

At 7:35 I return to the 3Y's normal frequency, get the antenna back on Bouvet, and sit listening, albeit impatiently. About five minutes later, I hear the 3Y return to the frequency, but, interestingly, about three hundred hertz higher in frequency. "I have returned. QRZ now, listening fourteen one fifty and up, from 3Y2LA, Over."

Hah. No injunction against North American stations calling. I had set my transmit VFO right on 14,150 in just that hope. I call, then listen.

"W1JR here's 3Y2LA. You are five by eight, do you copy? W1JR from 3Y2LA, over." I listen. Darn. W1JR was dead on the same frequency I was. But probably a better signal. And he got the QSO. Should I move up a kilohertz or stay on JR's frequency? I decide to slide up a kilohertz, and make ready to call.

"OK. Now, I listen for Europe stations. QRZ Europe, from 3Y2LA." Darn! Well. I did guess right. And I was ready for the tiny window that did let one North American station through. But it wasn't me. I couldn't pull the trigger. I sigh, then go to call into the office to tell the boss that I am taking a vacation day.

I listen through the morning as the 3Y continues working Europeans. Then, later in the morning, he starts working Asian and African stations. As he goes, his skills at coping with the pileups seem to continue to improve slowly. I keep trying to track his receiving pattern, trying to develop an edge for when he starts taking North American stations again. I hope. But all I can learn is that Jim's description of the 3Y's tuning pattern seems to be completely accurate.

In mid-morning, he stops, and explains for several minutes what the trip is about, and states that he will continue to operate either about two or thirteen more hours; the length of time depending on whether the expedition decides to leave the island in late afternoon or early the next morning. He repeats the QSL information, states that he will work perhaps another hour of Asians and Africans, then take Central and South Americans plus the Pacific, then if there is time some more North Americans. My stomach grinds some more, and I wonder if I would damage any QSLs in soaking the stamps off in pursuit of what might be my next hobby.

Nonetheless, I keep listening. My wife comes down to see how I'm doing, and I'm embarrassed to say I am rather peevish with her. "Look," she tells me, "I know you are all nervous. And you didn't get much sleep. Why don't you go take a shower and get dressed, then listen a few more minutes and if nothing is changed get out for a few minutes and take a brisk walk. It would do you a world of good." I recognize the value of her advice, and follow it.

When I return from my shower, the situation seems to be the same as before, so I go for a bit of a walk. It takes several minutes for the sharp late October breeze to blow away the fog I start in, but soon I am able to put the 3Y out of mind for a few minutes. The colors of a Midwest fall mixed with the invigorating breeze do wonders for my spirits. My wife is a smart lady.

Forty minutes later, I am back in front of the rig, somewhat refreshed, ready again to enter the fray. Nothing seems to have changed. But at 1820 Zulu, he starts a QSO in Norwegian again, one that lasts several minutes. Although he slipped into Norwegian on a number of brief QSOs, this time the conversation is longer. Then, he returns to English. "OK, my friends, please QRX for five minutes. I will return then." I wonder what's up, but I have an ominous feeling; he is nearly through the two hours he spoke of earlier. I sit and wait, but hardly patiently.

About three minutes later, he returns, but calling a Norwegian station in Norwegian. The station apparently comes right back. At this point of the day we seem to have pretty good propagation to Europe, and I can hear the LA station even off the side of my antenna. They QSO for several minutes, then the 3Y returns to English. "OK, here's 3Y2LA. We must QRT in ten minutes to prepare for our departure from Bouvet island. I will work all stations now, listening 14,200 and up. QRZ?"

My fears are confirmed. Desperately, I call, as I know literally thousands of others are doing, all despairing. Including me. All too soon, yet seemingly taking forever, the 3Y2, after four more QSO's, all with W4 stations, again addresses the hosts of DX'ers. "Gentlemen, and Ladies as well, I must QRT now. Thank you for the contacts. This is 3Y2LA on Bouvet, now going QRT." Stunned, I turn the rig off, put the headphones down, sit silently for a minute, then head for the stairs. All I can think of is my fervent hope that my original QSO would hold up and be in the log.

I'm sitting in my arm chair in the den, reading the newspaper and trying to evade the gloom that seems settled over me, when suddenly I sit straight up. Of course. He still might be on! That's what that last Norwegian QSO was probably about. How long ago did I turn the rig off? It couldn't have been more than five minutes. I jump out of the chair and race back to the shack. There's just a chance.

As I negotiate the stairs another thought hits me. I couldn't find their private frequency before - yet when he had left the frequency, - allegedly for a commercial schedule - and later returned, his transmit frequency had moved part of a kilohertz. So he had moved the VFO while away from the frequency. But, assuming he was working his Norwegian buddies, how come I could never hear him?

Another flash hits me - he wasn't on twenty meters! He must have been on either forty or fifteen meters. If so, which band? I decide I don't have a choice. If it was forty meters, I'm dead regardless. No way can I do any good if they are running his pals on 7060 and in daylight for me. But if they are on fifteen meters, that might be another story. Of course, this time they could be on twenty meters on some other frequency.

I decide to gamble, and turn the rig to fifteen meters, and start tuning. I quickly establish that the band is in pretty good shape, and move the linear to the band as well to be ready, just in case. Might as well be hung for a sheep as a goat. I hear no Europeans, but I hear South American stations working Europeans, and giving them good reports, strongly suggesting a path between Bouvet and Norway. I set the selectivity to eight kilohertz and start tuning at 21,200, moving up.

Just as I tune past 21,240 I get lucky. I hear a voice speaking in Norwegian, which I am now beginning to recognize, and quickly have him tuned in, and switch the selectivity to the narrow SSB position. Yes, it's him! The 3Y! I recognize the voice, having listened to little else the last eight hours. He seems to be chatting for a moment, rather than trying to run stations through. Then I hear him apparently signing calls, and saying two words in English, "Seventy Three."

I waste not a moment. "3Y2LA, 3Y2LA, here's W9KNI, Whiskey Nine Kilowatt Norway India, you are five by seven, five by seven, over."

"Stand by, the W9." My heart pounds. I wait. Perhaps ten seconds later, he comes back on, says a few words in Norwegian, then calls, "W9KNI, Whiskey Nine Kilowatt Norway Italy, here's 3Y2LA. OK, OM, you are positively my last QSO. You are five by seven also. QSL?"

"3Y2LA from W9KNI, I QSL, and thank you so very much. My name is Bob. 73 from Chicago. 3Y2LA, from Whiskey Nine Kilowatt Norway Italy."

"Roger, Bob. You are in the log. I am Ragnar. The helicopter is waiting. We are leaving the island in ten minutes. 73. 3Y2LA is now QRT." And he was.

15

Addendum

The previous chapter was essentially fictional, but very much a possibility in the real DX'ers world, where unannounced surprises do occur. It was written to illustrate some of the joys and sorrows of DX'ing, not to mention the lesson that effective DX'ing includes thinking skills.

Indeed, just a few months ago yours truly worked a ZL9 station on Campbell Island, a new country for the author's QRP DX chase. The operator popped up unannounced, running a QRP rig to a simple antenna, made perhaps a hundred QSO's on 30 and 40 meter CW and QRT'd. It was another day before the validity of the operation was confirmed – by then the operator was long gone.

Sadly, the jerks causing QRM on top of a DX station described in the chapter just concluded remain all too real.

In any case, Bouvet remains one of the rarest of countries, and very occasionally does pop up for what are usually unexpected operations by teams of scientists. A very notable such operation occurred between December, 2000 and March of 2001 by former

Astronaut Chuck Brady, N4BQW, operating from Bouvet using the call sign 3Y0C. Chuck was there as a member of a scientific expedition; Chuck is a scientist himself.

Although he had full time scientific duties, Chuck did his best to work the DX community, and managed to make several thousand DX'ers very happy. The great majority of operation was on 20 meters SSB.

Chuck's operation came right in the middle of my QRP country chase, from my new QTH in northern California and of course I needed him. During the first weeks of his operation I only made a few tries to log him – the towering pile-ups on SSB did not make an attractive situation for QRPer's. Many of Chuck's QSO's came from list operations, too; and I am frankly reluctant to engage in working DX from a list operation if it can be avoided.

As Chuck's operation began to wind down I was wondering if I was going to manage to work him. I finally decided I might try to work him through a list. I tried that a number of times, but always ran into a problem – I couldn't get on the list! The twelve watts peak output from my K2 simply wasn't up to beating out the others calling the list master. I was careful to always point my antenna at the list taker – not the DX station – but still couldn't manage it.

In mid afternoon on March 1, 2001, my luck turned. I was listening to another list session for Chuck high up in the 20 meter SSB band. My fortunes with the WA4 list master remained unchanged; I couldn't crack the list. The list master was in Alabama, and of course I was off the back of his beam, and as well all the upper east coast stations had great propagation to the list taker. Chuck on Bouvet was good copy – an honest S4-5.

As the afternoon wore on, my frustration increased – Chuck's signal actually was slowly improving, while many of the east coast and Midwest stations on the list were having a hard time copying him as they went into darkness and lost their path. "When last heard, you were four by four, four by four, please repeat my report several times, over over." Phooey. What a crock of spit. And I still couldn't make the list.

Then the WA4 announced that he too was starting to have trouble copying Chuck, and that the next list of ten stations would have to be the last. Again, I failed to make the list. Some of the stations who did make the list stated, "I'm having trouble copying him but I'm hoping he will come back up."

The WA4 then tried to transfer his list to Chuck, but while Chuck could copy him, as I could clearly hear, the list master could not copy Chuck. Finally, he threw in the towel.

"OK Chuck, sorry, I'm not copying anymore. I'll look for you tomorrow, same time and we'll go again. 73...."

Chuck came back to him and responded to the affirmative, and went on to state that he had to QRT momentarily in any case, but the list maker had lost him completely and copied nothing, as evidenced by his failure to respond when Chuck turned it back to him. The frequency was actually dead quiet for a golden moment.

It's now or never – I called, "3Y0C, here's W9KNI/6, Whiskey Niner Kilowatt Norway India, portable six, how copy?"

"Roger; W9KNI from 3Y0C, do you copy?" I think Chuck may have thought I was calling blind and got lucky on the timing.

"Roger Chuck, good copy. You are 5 X 5, 5 X 5 here near San Francisco, the handle is Bob, Bob. I'm running QRP here – 12 watts output and I'm tickled to catch you. 3Y0C from W9KNI/6, over."

"OK, Bob, good copy. You are 5 X 5 here also. I'm glad I am still able to get into the States. And your 12 watts is doing a real good job. What are you using for an antenna? Anyhow, I have to QRT now. Could you please QSP to my list taker that I copied his last transmission and I do hope to be on again tomorrow?"

"Roger Chuck. The antenna here is a Bencher Skyhawk. I'll be glad to QSP to your list taker when we are clear. 73 for now and thanks for the new one. 3Y0C, here's W9KNI/6, clear."

"OK, thanks Bob. 73. W9KNI from 3Y0C clear." And with that he QRT'd and with considerable pleasure I called the list master, who now seemed interested in hearing me...

That was country #260 for my K2 QRP effort – and a very memorable one too. Thanks Chuck!

Note: an excellent write up on the 3Y0C operation was printed in the November 2002 issue of "The DX Magazine."

16

Graduate Hunting

I was a bit late getting home. Several problems at the office had required an after hours meeting to clear up, but a phone call to the coast and actually catching the fellow I needed had finally helped settle things rather neatly, so I went home pleased with myself, with a clean slate and a clear conscience. Dinner was waiting for me when I got home, along with the latest copy of "DX'ers Tout Sheet."

The rest of the family had finished eating, so I was able to read the bulletin quietly. The front page news was rather unexciting to me; there were several reports of DX'peditions to places I don't need, and none of DX'peditions to places I do need. 'Twas ever thus; the places I need at this point seem rather short of Hilton Hotels and landing strips for 747's. Like the Lakshadweeps or Somalia.

Inside, I begin to do a little better. Although there were no news stories of interest to me, there were reported sightings of several stations I do need. 5U7AR was reported by two stations on fifteen CW; apparently back from leave in France. That's good

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news; there had been reports that he was not going to return to Niger, and they seem to have quit issuing new licenses there for the time being. He is apparently the only station operational, and definitely a rare one.

I check the times, dates and frequencies; yes, typical; around noon on week-days, local time. He's a tough bird to nail, which is of course part of the reason why he's rare. He seems to mostly prefer working the Europeans, and at that time of day propagation is iffy at best for us into the central African area on fifteen, and non-existent on twenty and ten at this time of year. After I finish chow, I'll go to the shack and make notes on my blackboard.

I look over the weekly country list of reported DX stations, which is derived from the spotting nets. This is a very useful exercise – you are rather less likely to be hunting a station you need if you don't even know he exists. I have gotten on to more than one new one this way.

Aha! ZK3KP, Tokelau islands. He must be back. Tokelau certainly represents one of the more frustrating DX catches I need. The sole station on the island was irregularly available for a few months, then went QRT for a trip away from the islands, but had made it known he would return.

The difficulties of working him are not his fault; it seems there is no commercial power on that island in the Tokelaus, and he is using solar batteries to charge a motorcycle battery, with which he is powering a 5 watt QRP rig to a vertical. When he went there, he had to carry everything he needed in a backpack and a suitcase, so the battery had to be small and light; ditto the solar panel. He shows up occasionally on twenty meter CW somewhere between 0800 and 1100 Zulu; real night watch stuff, and with a very inconsistent operating pattern. That said, he is workable if only you can find him, and is reported to be for the QSL as well. Most weeks he seems to be on at least once, always on 20 CW, but with no other apparent pattern. The essence of nightmares, of lost sleep, of frustration.

But then nobody promised us a rose garden. Anybody can call himself a DX'er. And a lot of fellows who confine their activities to working DL's on Sunday afternoon consider themselves

DX'ers too. But forcing oneself out of a warm bed at 3 AM local time on a Tuesday to check a band that is probably dead for a station who is probably not there separates the DX'ers from the Weekend Warriors. And, from the looks of it, if I want to work the ZK3, I'm going to have to earn my stripes as a DX'er.

I finish dinner and head down to the shack. I fire up the computer, and pull up the last 50 DX spots. Hmm – nothing of great consequence – bands don't look too lively. I glance over my little blackboard at the notes there about stations heard but not worked, dates of upcoming DX'peditions, and information gleaned from the spotting nets. Antique though a blackboard is in an age of computers and logging programs, it still serves as a handy reminder to me. Right now, however, I already know its contents by heart; nothing hot for this hour. I chalk in the additional notes on the ZK3, and start a box on the 5U7. Maybe I'll get lucky enough to distinguish an operating pattern that will allow me take a vacation day to lay for him with a reasonable hope of success.

I go back to the computer and go to one of the DX sites that maintains a data base record of spots – an extremely useful resource. I type in the call "ZK3KP" and press the enter key.

A moment later the report comes back – about 35 spots, but all except 3 from before he left the island, with the remaining 3 new ones since his return. And all of them within a ten minute segment of one night, and that was two nights ago. Two of the spots were from W6's one from a WØ.

I sure would like to figure out something for that ZK3; regular watching of the band for that fellow is going to be really rough on me in terms of lost sleep. My logging program has a really spiffy feature – if a needed DX spot comes up, I can actually program it to ring my telephone and alert me. Trouble is, I have no 24/7 spotting capability. Living a few miles out into the country means no cable or DSL internet, only dial-up access. If I leave my dial-up connection on all night I am guaranteed to get a nastigram the next morning from my ISP. And I am out of range for packet radio spots – I rely on the internet.

Maybe I could recruit a few of the locals to help watch for him on a rotating basis. Darn it all, if he would come on just an hour or so earlier my West Coast buddy could check for him before he goes to bed and call me when he finds him; Jim would certainly do that for me. But his earliest reported operating time so far is 0800 Zulu, and that's midnight on the coast and Jim has to work too. Jim knows I need that fellow; certainly he will keep an ear open for the ZK3, but I'm going to have to take other measures if I'm to have a real hope of success.

But in the end I decide to hold off another week or two and see if I can get more information that would help me develop a pattern. If I can ever figure one out then I will be happier organizing a rotating watch system. Might as well optimize chances as much as possible before we start to lose too much sleep.

I settle down in front of the receiver for a little tuning, but it soon becomes apparent to me that a propagation disturbance is in progress. I glance at the spotting screen to see the WWV numbers – yuck. The K index is 35. No wonder DX signals are few, and certainly not from trans-polar paths, but rather South Americans and a couple southern African stations. I swing the antenna south and have a look for the Antarctic Islands, but I find nothing.

I decide it's a good night for a little maintenance on the linear. I disconnect all the cables, then oil the blower bearings, clean the insides of the RF compartment, and wash the tube chimneys so that the infra-red heat can escape. Then I reconnect everything and check it out.

I come across YV1NX calling CQ, and give him a quick call. He comes right back, and we have a nice QSO, exchanging a few DX tips. Fergus worked the ZK3 before he left the island, but of course is sympathetic to my quest. He needs a 5U7 too, and has no information for me, but he is very pleased to hear that 5U7AR is QRV again.

We ragchew a while longer, then I decide to retire. Signals even from YV seem to be fading; a good night to catch up on my reading. I pull the switches, and head up the stairs.

17

Antenna and Tower Notes

There is an old philosophy about antennas that goes, "If it survived the winter, it wasn't big enough!" This approach seems to be the guiding design philosophy for many would-be DX'ers. It is also the wrong philosophy.

If we presume your primary operating interest is not contests per se but rather the pursuit of DX, and of new countries, an accurate view point is that DX'ing is a year round contest. This means that you expect to be on the air at any time during the year, looking for the new ones, be it by tuning or by waiting for the spotting net to deliver the particulars, and then trying to crack the pile-up.

But, if your antenna is down, you can't be effectively chasing that new country.

An effective DX'er must be able to deliver a signal, preferably with gain, on any amateur frequency where the possibility of finding a new country exists, and at any time. You may be able to rule out eighty and one hundred sixty meters, but on forty meters and above you must be operational and ready at all times. This implies a high level of reliability, both in your equipment and in your antenna system. And don't forget, that includes the tower, rotor and feed line as well.

Considered from this perspective, many antenna installations are distinctly too ambitious. Crank-up towers designed for small tribanders are too often pressed into service carrying huge stacked monoband arrays. Big yagis are rotated by TV rotors possessing no hope of survival in a winter storm. Two inch fence post pipes are used for masts to hold large arrays ten feet over the top of the tower. And owners of such installations spend two thirds of every winter QRT waiting for spring to arrive so that they may assess the damages and begin to rebuild.

Of course, the reasons for this situation generally either reflect economic reality or the real estate available for antennas, and certainly these are genuine considerations which cannot be ignored. However, where a compromise must be made, it is too often made in favor of a stronger signal rather than sound engineering practice.

Your author here is pleased to note that these problems were far more common in past than they are today as this edition of the book is being written. But the advices remain in the book – DX'ers new to towers need to know that the job must be done right for safety and reliability – and maintaining good relationships with the family and neighbors are not the least of the issues involved.

The reliability of antennas themselves is an important consideration, especially considering the environment they are to be erected in. The author presently has two active antennas. One is the formidable Bencher Skyhawk triband yagi for twenty, fifteen and ten meters, with 10 elements on a 24 foot boom. All elements are full sized, with three active elements for 20 meters, three for 15 meters and 4 for 10 meters. The antenna is built to last – all stainless steel hardware, and 100 mph wind survival ratings. As the author gets older and climbing trips up the tower become more of an issue, mechanical reliability is paramount.

The mast used to support the Skyhawk is 2 inches (51mm) diameter 1/4 inch wall (6 mm) chrome-moly steel. The rotator sits below the top of the tower on a shelf, and a thrust bearing carries the weight of the antenna array. It is rotated by a HyGain Tailtwister with the Rotor-EZ modification from Idiom Press installed. The tower is steel, Rohn 45, with 18 inch (45cm) across the sides, and carries two sets of fiberglass non-conductive guy wires. The guys are attached to guy brackets with torque bars. (Note: candor requires that the author tell you he owns Idiom Press. He also is a part owner of Bencher, maker among other things of the Skyhawk tribander yagi, Butternut antennas, and the superb line of Bencher paddles. He believes in these products, which would not exist without his efforts.)

Needless to say, the author has tried hard to follow his own advice - the whole installation is conservative by any engineering standard.

The other antenna is a ground mounted Butternut HF9V vertical, set on the corner of the yard, with 8 30 foot radials. This antenna was my only antenna for better than a year after moving to a new QTH, and gave a very good account for itself. I had decided to do some time concentrating on 40 meters, always a favorite band. In 14 months, 140 countries and all CQ zones were worked, all at a power level of 100 watts out. The Butternut has been up for 9 years now, and remains an effective and trouble-free workhorse, used primarily for 80, 40 and 30 meters, while the Skyhawk is the antenna of choice for the higher bands.

At an earlier QTH, I used a two element triband quad, which I managed to keep up for eight years, and attained the Honor Roll with it. The quad was originally chosen for several reasons, all of which were then valid. One certainly was economic. A full-sized two element quad was not only reasonably inexpensive in itself, but the small wind area and low weight meant that a less expensive rotor could be used. Another aspect of the quad was that as a tribander no compromise was made, unlike the typical trapped triband yagis then offered. Being full sized on each band insured maximum bandwidth and gain across the full amateur bands the quad was designed for. And the antenna was a delight to use in situations where rain static wiped out reception on yagis.

But nothing is perfect. The mortal enemy of the quad is winter, and especially winter ice storms. Though the quad used was one of the better designs then available, and was improved as experience dictated, during several winters the author was QRT on the higher DX bands for some months, awaiting warmer weather to repair broken wires, and was back on the air only due to heroic efforts on the first day the temperature rose above freezing. Finally, after a major ice storm destroyed it, a 16 foot boom triband yagi along with a larger rotor took its place.

After a major relocation to a new site, the author installed a new Skyhawk triband yagi. This antenna has been up nearly seven years and has met and exceeded every expectation. It has been one of the keys to my QRP run that has brought a huge amount of fun and satisfaction. And, it has survived a lot of bad weather.

Let us return to a further discussion of towers.

Towers used by DX'ers can be pretty much divided into one of two groups – fixed towers and crank-up towers. Each has its merits and its negatives.

The author, being able to climb, has always had fixed towers, all of them guyed. Fixed towers are less expensive, can go higher, and if properly engineered for the site will survive any weather. If they are guyed they require only a small concrete base. And, they never have to be cranked down in anticipation of bad weather.

But, virtually all service work on them requires a climber, and frequently a ground crew in support of the climber. Guy wires themselves can pose hazards and liabilities – more than one installation has been destroyed by a tree falling over a guy wire. Also, steel guy wires can interact with the antenna radiation.

Crank-up towers generally do not require guy wires and thus are attractive in locations lacking room for guy wires (though there are also fixed towers available that do not require guying.) Also, crank-up towers make the servicing of the antennas mounted on them much easier.

Crank up towers however are almost always weather limited, and must be cranked down whenever winds over their defined ratings are anticipated. They are considerably more complex, and to be properly maintained need more maintenance than fixed towers. (If you have a crank-up tower in use, when was the last time it received a careful inspection? If you have to be think about the answer you may be close to some real trouble.)

This one brief chapter is hardly the place to deal with all the issues of a tower; let it only serve to make you think before you commit to an installation, and when you do to be sure it is a solid, quality installation that will be trouble free and effective for years to come.

For a good deal of information on a proper tower installation, the company Unarco-Rohn has an excellent book offered through their dealers. The information is for their own products, and does not take into account crank-up towers, but much of the information offered is universal in application, and required reading for any one interested in a tower installation of any kind.

Regardless of what kind of tower is erected, the amateur owes it to himself and his neighbors to erect an installation matched to or preferably exceeding the surface area ratings of the antennas to be used with it, based upon wind conditions of your area. Guy wire if required should be purchased with attention to the load ratings the tower will be called upon to carry. Thimbles and cable clamps should be of premium quality. Materials for TV towers, masts and antennas simply will not serve for any but the most modest of amateur antenna installations.

Absolutely insist that turn-buckle eyes are forged and pierced, rather than made from formed and bent wire. A good friend lost a beautiful tower and antenna system because a turnbuckle bought at the local mass-merchandise hardware department pulled open during a wind storm. If you have trouble finding the good stuff, check the local farm supply outlet, a contractor's supply, or a marine supply store. And fortunately there are tower dealers who specialize in offering DX'ers the quality components needed for a reliable and safe installation.

Careful attention to lightning protection and grounding should be a part of the final design. And, consideration should be given as well to seeing that the tower is child-proof for climbing. Consideration should be paid to guy wires that come down to the ground to avoid injury to those taking an evening stroll, which could well include you or members of your family. Some installations use a heavy steel post set in concrete to avoid this problem, so the wires do not come down to the ground. Others take a piece of garden hose and slip it over the guy, so that accidental contact with it will not be as dangerous, and the wire more easily seen.

Many amateurs use climbing belts for tower work that are obtained, honorably or otherwise, from the local utility company. Often, these belts hang mouldering on a nail till they are called into occasional service, at which time they are used as a life support system. Needless to say, this does not exactly constitute good practice. Belts should only be stored so that they hang straight by their tongues. At least once each winter, leather belts should be cleaned and oiled with a preparation of neat's-foot oil, and given a good inspection and the careful attention your life deserves.

Another place that the DX'er should not skimp or take the quick way out is in the coaxial cable for their station. If the reader is not comfortable with discussions on coax attenuation, spend an hour or so one evening and study the concept in your "ARRL Radio Handbook." It is not difficult stuff, and a simple understanding can go far towards helping you be competitive on the bands.

It is very easy to select and buy bad coax that can and will negate most of the efforts made to have an effective antenna installation. There are many grades of coax available, and many of them are terrible. The serious DX'er has only limited choices for feed lines, particularly for twenty meters and up.

One choice is to go to hard line coax. If the antenna is more than a couple hundred feet from the back of the linear to the antenna balun, hard line or premium low-loss coax is almost a must. There is no sense in spending big money for a linear amplifier and a tower and then leaving hundreds of watts in the coax. Nor does it make sense to extend the boom length of the yagi for an extra dB of gain, only to leave several dB in the coax.

If your antenna is not so distant from the shack, good quality conventional coax is fine for your feedline. But - Caveat Emptor! Do not buy any current RG8 or RG8/U coax. Coax of recent manufacture carrying that designation is junk designed for CB'ers. Never buy coax from a CB shop or any mass merchandiser.

The minimum coax the DX'er should buy for outside runs is RG213/U. Belden coax is especially recommended as a safe choice, but there are other brands of good quality. Most amateur radio dealers carry the good stuff. Stay away from the foam dielectric coaxes; life isn't long enough for the grief they can cause. You should also know that regular coax is not designed for direct burial (meaning just put in the dirt without protective self draining pipe); however there are buriable coaxes of good quality available.

An interesting coax is type specification 9913, and should be given consideration in installations not using hard line. This coax features superb low loss characteristics, approaching those of hardline at a significantly lower cost, accepts standard UHF connectors, and is entirely suitable for HF runs of hundreds of feet. Type 9913 cable does not have the full flexibility of normal RG-213, so cannot be used on crank up towers or for the feed to the antenna itself. Regardless, it still is a good choice for the coax to the base of the tower, but can be used to the top of guyed towers, where a short run of regular coax can go to the antenna. But one note of caution – 9913 is not mechanically rugged, nor will it take much flexing. It is an excellent product when properly used however.

And, while on the subject of feedlines, another false economy is the use of "bargain" coax connectors. These connectors will generally handle your transmitted RF just fine. They also will often degrade receiving performance, help cause TVI instead of helping prevent it, and can even cause IMD product deterioration on SSB. Very good connectors are available today, with Teflon insulation and silver and gold plating. Especially for outside service, use the best connectors you can find – not the cheapest!

The DX'er should pay some attention to the rotor control wire used as well. Study the manual for the rotor, and be sure to follow the manufacturer's recommendations on wire size for the run length of your installation.

The above comments should by no means be considered to be complete and comprehensive. They are offered only to suggest that there is a good deal to the subject of towers, antennas and feed lines, and the rising DX'er intent on a good installation should spend time studying the subject and the literature from suppliers. And, as in so many other fields, you get what you pay for. Reliability, integrity and safety should be the design goals of a tower and antenna installation, rather than maximum height and longest boom without regard to long term survival.

For those interested, in the author's case, his antenna, the Bencher Skyhawk yagi, is 360 feet from shack to balun. In designing the installation, there were two choices – immediately next to the house, or at a site nearly 300 feet away. The house site is the highest on the property; the other site under consideration being about 15 feet lower in elevation. Advice was asked of another DX'er who had experience both ways.

"Put it away from the house – buy 15 more feet of tower and get the best low loss coax you can find. You will avoid a lot of RFI problems and the house will look better for it. You will be much happier in the long run." I followed that advice and have been glad I did ever since.

The coax used is 75 ohm 7/8" cable TV hard line. This lovely coax has an attenuation of .3 dB per 100 feet at 30 MHz. In comparison, 9913 has an attenuation of .6 dB per 100 feet at 30 MHz. The cable TV company of a nearby community was glad to give me roll ends left over from new neighborhood installation, since they otherwise would have had to scrap it. The pieces so donated ran from 60 to 200 feet in length. Homemade connectors were designed to interface with standard UHF connectors and have worked out well. A splicing procedure was developed so that the shorter pieces could be connected for the needed run.

Impedance transformers to go between 50 and 75 ohms were built to a design from the "ARRL Radio Handbook" from editions published in the '90's and placed at each end of the cable. (Unfortunately that design is no longer published in current editions, but the design is simple and effective, and is worth seeking out if you have the need.)

The tower is 80 feet high, and reaches 65 feet above the top of the property.

The installation has worked out well and no significant changes in it are planned. Plans are afoot however for a 17/12 meter yagi in the coming year.

Competitive DX'ing and towers are inter-twined. Do it right. It costs a little more initially, but pays big dividends in the long run.

18

Hunting Continued

I was out of town the whole week, attending a trade show, and antsy the whole time wondering if I was letting the ZK3 slip through my fingers because of my absence. I got home late last night and of course checked the bands before going to bed, to find them dead. The propagation numbers showed a solar storm, apparently winding down. That made me feel better – even had I been home I probably could not have worked the station.

After dinner I head for the shack. I settle into the operating chair with a cup of coffee, and a chance to read my new copy of "The DX'ers Tout Sheet." The front page offers hope of a DX'pedition to Mount Athos in six or seven weeks, and there is a rumor as well of a serious operation from S.M.O.M. in Rome, which would be a really popular item if it comes off, though I don't need it. And apparently one of the OH fellows operating portable C9M in Mozambique has secured proper documentation for his operation, as the ARRL is now accepting his cards for DXCC. That is great news for some of the gang who have been sitting on C9M cards.

Page two has more of the details of the aborted DX'pedition to the Kermadecs. They did the right thing in not pushing ahead; though really they never should have even attempted the trip during the typhoon season. Another item immediately below catches my interest – several paragraphs about ZK3KP.

It seems he is a Scotsman national doing some sort of anthropological research on a remote island in the Tokelau group. The island he is on has less than a hundred inhabitants, is very remote, expecting a trade schooner to call about 4 times a year, and has no electricity or other contact with the outside world. He arrived on the island with two suitcases – one with his personal and research needs, the other a small homebrew QRP transceiver, a hand key, a motorcycle battery, a little coax, some wire for an antenna, a small motorcycle battery and a small solar panel to charge it with.

He had built from local materials a small stand to hold the battery charger, and used an antenna consisting of a vertical piece of wire for twenty meters suspended from a palm tree, with two radials at the bottom of it.

His operating is very limited – according to the report, his battery will not support much over an hour's operation, and it typically takes three days to recharge the battery after an operating session. He is described as not being a dedicated DX'er at all, but he enjoys operating and working people with his QRP rig. The first part of his stay he managed about 60 contacts, mostly with Pacific stations, a few JA's, a few west coast USA and a very few Europeans. He left the island for a period due to some unexpected dental problems, and returned to the island several weeks ago.

I go the DX website with the callsign database and plug in his call. There are more reports now.

Let's see here. OK, he was spotted on the fifth, the eighth, the fourteenth and the twenty first. Darn. The first dates support the "operate and then recharge for three days" concept, but then the following dates for spots don't support that pattern.

I put it down on paper. He was on the fifth and the eighth, that's three days apart. Then he is reported on the fourteenth; that's six days from the eighth, or two times three. Maybe he was on the eleventh too, and no one spotted him on the net? Entirely possible. Pacific DX has always been light on spots unless there are good prime time openings into Europe or North America.

I decide that is likely the case, since he indeed was spotted a further three days later. But then, even if I'm correct so far, the next report is on the twenty-first, a week later, instead of six days.

Perhaps he was on again on the seventeenth, and again not reported. That would explain that part. But why did he then show up on the twenty-first instead of the twentieth?

I can think of several possible reasons. One, of course, was that he simply had something else better to do. But he operates so regularly on that third day, if I'm right, it would seem that he puts a high priority on it. Heck, he's probably bored to tears out there, and getting on the air might be the highlight of his week. I wonder how propagation was. I decide that there may be a clue in that.

Back to the website. I pull up the WWV propagation data for every day going back the last three weeks. I check and write down the numbers for the eleventh, the seventeenth and the twentieth.

OK. The eleventh was flux 110, A-19, K-4. The seventeenth was flux 136, A-7, K-2. And the twentieth was flux 124, A-34, K-5.

Yes, that would explain things. The eleventh had fairly bad conditions, so that the fellow may well have been on, but conditions were bad enough that few if any heard his QRP signal. And very probably the States didn't have propagation to him. And conditions on the twentieth were worse. Probably after a bit of tuning around the fellow went QRT to save his batteries for a day with better propagation. It's all speculative, of course, but it does make sense. The three day pattern, as amended, seems to be pretty accurate.

But what would be a good time to be watching for him? I check over the reported sightings for data. They seem to be all over a field between 0810 and 1045 Zulu. I try to discern a pattern from the times that he was reported on, testing to see if there is any correlation between date and time, but it appears hopeless.

If there is a correlation, it's beyond any logic I can detect. Probably he doesn't even keep a wrist watch out there. I wouldn't either. But that doesn't help me work a new one and still get some semblance of a night's sleep.

Of course, I am dealing with random and incomplete data. I have no guarantee at all that the reporters to the DX'ers Tout Sheet necessarily heard the ZK3 from the moment he started operating any given evening. They may have heard him five minutes before he closed down, or heard his opening CQ, or anywhere in between.

That rings a little bell – I pull his recent spots back up to the screen. Hmm – two different spots, on different days, reported that he answered their CQ's. Thinking on it, that makes sense. Calling CQ with QRP is not a real successful way to get lots of QSO's, rare call or not. He would do better to answer CQ's for contacts.

Again, people who call CQ aren't always hot shot DX'ers, anxious to call in their catches. It all makes sense, all helping to make this fellow a rare catch indeed.

I can't complain. As it is, I'm delighted I have enough data to work out what appears to be a valid theory on his operating activity at all. In any case, the information from the "DX'ers Tout Sheet" states he can't operate much over an hour before his batteries go out and he has to recharge, which in turn does suggest his operating times are rather random within that 0800Z to 1100Z slot.

I decide I have enough information to try to organize an effort to snag him. The best bet is a coordinated search effort by several of the local DX Club members. On any given night we are to patrol for him, based on the spot reports, we are going to have to cover at least three hours total to be sure of hearing him, if propagation holds for us.

OK. Who would likely be willing to take a turn in a watch for him. I get the club need list out, and have a look. OK, I find MM, NUD, QVB, J, RY, and myself. There's several others too, but past experience suggests they aren't serious enough about DX'ing to lose sleep looking for a new one. OK. If each would watch for an hour in the night, we could cover two nights, and, if we fail the first time around, we could repeat the watch a second time. If propagation improves, as it should, we're almost sure to get him, according to theory. His last spot was two nights ago, the twenty-first, meaning that tomorrow night he might be on. Yes, it's definitely worth a try...

K3RUK

19

The DX'er and His Environment

"The ideal QTH is an island in the middle of a salt marsh atop a high plateau." from an address by Lew McCoy, W1ICP; Dayton, 1979

In the States, at least, most people move from house to house every few years, and even though DX'ers are in no other way average people, in that respect they often are. And, certainly, the DX'er does not exist that, when he moves, does not try to pick a new address with a quaint name like "Hilltop Ridge Lane," "High Vista Drive," "Telegraph Hill Road," "Overlook Avenue" or whatever.

This observation is not facetious, either. If one day you have nothing better to do, copy a couple dozen American calls out of a pile-up, then go check out their addresses. You will see the above is true with a surprising number of the stations you heard calling.

Generally speaking, picking the highest point in three counties is a fairly good start to a great DX location. However, it usually isn't available. And if it is, often it is because it lacks refinements. Like roads, electricity and telephone service. Of course, in such cases the clever DX'er can work out alternate approaches to such simple needs, but other members of the family have been known to take a differing view on such matters.

Site selection, then, generally becomes an exercise in optimizing the possible. Certainly, high ground is always a desirable aspect of any site being considered. And in places like San Francisco, it is a simple exercise to determine what high ground is. But in places like the Chicago area, determining what QTH will be favorable is not always so easy.

The answer to this often lies in survey maps. Survey maps show elevations of terrain at any given point, and typically with a resolution of five feet in height. Learning to read these maps is not difficult, especially when comparing a map to the characteristics of a known location. In the States, these are usually available from the State Geological Survey Commission for most or all areas in the state. And survey maps are available in most other countries as well. A call to the city or county engineer should be helpful in finding a source for such maps. But it would probably be wise to not tell him the true purpose of your interest, as will be discussed later.

What are the characteristics of the ideal QTH that the DX'er should seek on such a map? To consider this, first we must digress for a moment, and consider the effects of terrain on a signal. To achieve the best gain in a given direction, the antenna should be located on the side of a hill facing the direction for which the gain is desired, rather than the top of the hill as most amateurs would expect. By being on the side of the hill, gain is derived from a radiation component reflected by that portion of the hill that goes up and away behind the antenna. Were the antenna on the top of the hill, that reflection component would be lost to undesired paths.

In practice, this factor would be rather more significant in the case of a dipole, rather than an array having forward gain, but it is a real consideration. Indeed, if the station were located on the top of a hill, and there were none of the normal constraints that most amateurs suffer, the ideal antenna farm might well consist of arrays scattered around the sides of the hill, all well below the crest, with switchable feed lines to select the optimum antenna.

In the world that is real for most DX'ers, however, such a plan is not possible. More likely to be real is either the possibility of being on top of a hill, or to be sitting astride a ridge. The top of the hill, all else being equal, is the preferred location for the DX'er, as the ground slopes down and away in all directions, yielding a reflection enhancement that can be worth between 3 and 6 dB on the DX paths, not to mention the simple benefit of the enhanced height. However, such hills are often rare, especially in the urban environment, with ridges a far more likely possibility.

Being astride a ridge, while not as desirable as being on a hill top, can make for an excellent DX'ing location. Signals propagated in the direction of the ridge spine will not be attenuated, while signals beamed in the sloping directions will receive a reflection enhancement.

In every case, the desirable feature to be sought is to have the ground sloping down and away from the antenna site in the direction to be optimized. All else being equal, it is desirable as well to have the ground sloping away be good moist conductive earth, to help optimize the ground image.

If a location that meets these requirements cannot be obtained, the DX'er should concentrate on finding a site that has no negative propagation aspects. Aspects to be avoided include significantly higher ground in any direction, or ground that slopes sharply up away from the antenna site in any direction likely to be important. The trouble with DX'ing is that sooner or later any direction becomes important. But, slightly depressed ground need not necessarily be ruled out, as long as there are no major obstructions in any significant direction. Depressed ground often displays ground conductivity that will overcome slight disadvantages of elevation.

Care should be taken to avoid high tension lines too close to the site. Such power lines can absorb significant amounts of RF, especially if they are within a hundred yards or so of the site. And noise radiation from them will plague the DX'er at least on an intermittent basis the rest of his life!

The classic work in the amateur literature on site selection is G6XN's work, "HF Antennas For All locations," published by the Radio Society of Great Britain, and widely available. It certainly is recommended reading for all DX'ers, although some of Mr. Moxon's work may be considered controversial on questions of what antennas to select in a given situation. But that is part of what makes antennas an interesting sub-hobby of amateur radio.

Also, computer programs are available that offer analysis of a potential site. These programs can give you a very good evaluation, and should certainly be used if you are evaluating a possible site. The author has never had much interest in such programs because by the time the programs became available he was already committed to a site, and didn't see any value in being told what was wrong with a site already committed to!

Having selected a potential site that meets the requirements of the DX'er and those of his family as well is only the beginning of the work the DX'er must do before the antenna erection party, or for that matter even before the finalization of the offer to buy. Careful attention to the legal aspects of a potential tower installation is absolutely mandatory.

There are generally two important possible limitations to antenna erection. One is the zoning ordinance governing the area, the other is the very real possibility of covenants and deed restrictions on the title that prohibit towers and similar antenna installations. While a good deal of the work to check out such potential problems can be done by yourself, it should be directed by a skilled attorney who is knowledgeable of the local situation.

Before you even get to the point of seriously considering a particular property, it is wise to determine what the potential problems are. For one thing, a town with no amateur antennas to be seen anywhere may be showing you an early warning sign. Towns with buried utilities often have particularly rigorous ordinances against towers. If you are looking in a suburban area, it is certainly wise to find out which towns are more favorable.

There are several ways to determine the local ordinance situation in a given town. Finding a local amateur is a start, where possible. But caution must be used. If he tells you that towers are no problem, that is a good sign, but certainly should not be considered as definitive. If he tells you that towers are absolutely out, that is a pretty good sign that you may be in trouble. But again, hams have been known to not welcome the prospect of a serious DX'er moving in down the street.

A trip to city hall can get a lot of answers, but caution is definitely advisable. Asking a question that never came up before has been known to lead to fast city council passage of an ordinance triggered by an unwise question. It is smarter to first try to see a copy of the ordinance at the local library, if possible. If not, ask to see a complete copy of the ordinance set without letting the clerk know of your specific interest.

Of course, a trip to the local ham club meeting, should one exist, can unearth a good deal of the information needed in a few hours about what the antenna situation is in the area. Also, don't forget, if a possible site is in an unincorporated area, the county board still has zoning jurisdiction, with some counties more restrictive than cities inside them.

Recent court decisions against restrictive local ordinances (But NOT deed restrictions or CC & R's) have generally been favorable to DX'ers, greatly helped by the FCC's pre-emption declaration widely known as PRB-1. And many states have incorporated PRB-1 into state law governing local ordnances. In such cases a fight against restrictive ordinances will probably be successful, and may even win the attorney fees you incur.

But a fight against a town is never fun. It tends to rile the neighbors, and sensitize them to possible TVI problems, even when you are off the air. All else being anywhere close to equal, you are far better off trying to buy a place with no potential problems, rather than a place where they are guaranteed.

When actually looking at houses, be extremely wary of houses involved by deed with home-owners associations. Many are harmless beer and barbecue societies, but others see themselves as keepers of the eternal flame and defenders of the covenants you will be required to sign before you gain title to the house. If a home-owners association exists, you must be especially wary of possible covenants contrary to your interests, and of architectural review boards that can force you take a tower down with no recourse. Obtaining legal review of the situation is mandatory prior to making a binding offer on a property.

It is absolutely essential that you have your attorney review the title to a house, prior to making a binding offer, to insure that there are no restrictive covenants attached that preclude outside antennas. Finding a recently built house without such covenants can be very difficult, especially in the American west. If those covenants exist and are enforced, you can be forced to remove your antennas, and you have no recourse. You will likely even be forced to pay attorney's fees for the neighbor calling for enforcement of the covenant. Be absolutely certain no deed restrictions exist, or your dream QTH can turn into a nightmare. DXCC can be attained using a dipole in the attic. But it sure isn't fun.

Once you move into the new dream QTH, you should apply for a building permit for your tower(s) prior to erection. Having determined earlier that there is no impediment, gaining the permit should be no problem. If you are told that no permit is needed, ask for a signed and dated letter from the mayor or the city engineer to that effect. Also, note in your log book the date of completion of the installation. Dated receipts for the purchase of the cement for the base will further strengthen your position. These procedures will help you prove that your antenna installation was legal when erected, so that it will be given grandfather protection should a more restrictive ordinance be passed at a later date.

Although you might be sure that you are in the right when about to put up a tower, another ploy can be valuable if you have any concern at all about neighbors. In this case, keep the tower offsite while you engage in preparation for the erection. Get your hole dug and base concrete poured without letting anyone know what is going on if at all possible.

When all is in readiness, install the tower on a Saturday or Sunday morning – bring it in, have the crew ready, and get it up. Most amateur towers can be fully raised in a few hours if advance preparation is done correctly. The advantage to this "surprise" approach is that it is virtually impossible to find a judge on a Saturday morning who would be willing to issue an injunction stopping the installation while objections to the legality of the tower are sorted out. And under American law it is typically a lot harder to force someone to take something down that is already up than it is to get a "temporary" injunction stopping the erection before you ever get started. But if your house has covenants and deed restrictions, this approach is useless and will only lead to additional expense when you are forced to remove everything.

Having secured the high ground you always dreamed of, and having planned the tower installation that will further enhance your signal, it is time to give serious consideration to lightning protection. It is not the intention of this book to be definitive about lightning protection, but rather to point out that in a serious DX QTH, lightning can be a hazard to life and property, not to mention the rig! Study the literature, and be sure that proper precautions are taken as a part of the tower installation and erection. Safety first!

After you have moved into the new QTH and have the antenna up, a little discretion is called for to avoid long term problems with the neighbors. Like, don't immediately go all out at full power in the nearest contest. The neighbors will certainly have noticed your tower and antennas, and will be apprehensive at first that all their stereos and TV's are at risk. It is better to meet their fears head on, offering to cooperate with possible interference problems, while at the same time taking it extremely easy for a few weeks, operating barefoot, avoiding prime-time football games, etc., except of course where a rare new country is on the line. And even then, if you think that you can make the QSO by operating barefoot, by all means do. The longer you go without your first TVI complaint, the easier it will be to handle it.

A significant problem, especially in a new QTH, can be interference from the power lines, making weak signal copy difficult or impossible. The causes of line noise are varied, ranging from untrimmed trees and bushes rubbing against a power line to arcing insulators. Power pole transformers are often blamed, but rarely are the cause of a problem.

Getting rid of a problem can be difficult. Power companies range from extremely cooperative to downright obnoxious in their attitude towards power line noise. But in the States, at least, they have a clear legal obligation to cure an offending noise when it occurs in their power lines. American DX'ers be glad; our British cousins have no legal protection at all against line noise.

If you have a problem the first step is to try to localize the source of the interference. Unfortunately, this is not always as easy as it seems. But a good first step is to do a little checking with your antenna, if it is rotatable. Note both the direction the interference peaks from, and also the direction where the noise nulls out. Then, go outside and look at right angles to the bearing where the noise is nulled, as this is usually the sharpest. With a portable radio in hand, go in the direction indicated, and try to further localize the interference. Remember that noise is transmitted down power lines as though they were antennas, complete with SWR peaks at various points. Once you think that you have isolated the noise source, it is very wise to walk several blocks up and down, checking the noise at each pole, trying to find a stronger noise source.

When you have optimized location of the noise source as much as possible, it is time to seek possible allies in the form of the people living adjacent to the problem, especially if they are not served by cable TV. An inquiry as to how TV reception on the lower channels will often bring surprising replies, like, "It's terrible. It's all the fault of that new ham that moved down the block!" Once you have that problem sorted out, you have a useful ally for calling the attention to the power company to the problem. For some reason, power companies seem more willing to clean up their lines to resolve a TV reception problem than they are for a DX'er, and a call from an irate viewer can work wonders without requiring you lift a further finger.

Should it be necessary to deal directly with the utility yourself, there are several techniques that are useful. The first one is to always get the correct name of each person that you talk to, and write down the date and time that you talked to them. And be sure that you have the name spelled correctly; do not hesitate to ask the spelling. Refer to the person you are talking with by name several times, so they become aware that you know their name. These precautions may seem silly at first, but they will do wonders at getting the necessary cooperation.

If you are told the interference is your problem, politely but firmly ask to speak immediately to their superior. Eventually, you will get in touch with somebody who understands what you are talking about, and who understands the company's responsibility to you. When you find that person, be polite, and be patient. Sometimes it takes weeks to arrange to have a problem checked out and resolved. Curry the favor of that individual, and secure his extension number and engrave it in your log book; he can be very important to your country total!

Recently, the technology for dealing with electrical utility noise problems has tremendously advanced. If you are suffering seemingly intractable problems with noise, contact ARRL for advice. The ARRL staff are a superb resource for members.

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Hunting–Again

"Hello, John? It's Bob... Yeah, fine... No, I haven't gotten my card yet, but I'm hoping. Good for you, though... Right, I did too... Hey, the reason I called; I think I've got a pattern figured out on the ZK3. The way I make it out, he normally is on every third day, because that's how long it takes him to get his battery charged from the solar cells. And if conditions are OK, I think we have a chance... Yeah, I know, but remember, that was at least four weeks ago, and we're a lot closer to summer conditions now."

"Anyhow, he's been reported on anywhere from 0800 Zulu to 1100 Zulu. Now, you need him, NUD needs him, QVB needs him, J needs him, RY needs him and I need him. That's six of us. So if we split it up and each watches an hour over two nights, and if we don't have any luck and do it again, we're almost sure to snag him. Are you willing to do it?... Yeah, I know. I agree, but he hasn't been reported outside that time frame at all, and if we're to get him, I think that's going to be the only way"

"OK, good. That's going to be the only way that we're going to nail him. And the first fellow to stand the watch can call the second, and the second the third. That way, too, we know everyone held up his end. I'll draw lots for the shifts if you're game. The way I have it figured we should start tomorrow night. I'll talk to the rest of the fellows, and draw the lots, and we'll finalize it tonight. OK?... OK, good, see you later. 'Bye."

Ring... Ring... Ring... Ring...

Ugh. "Hello? OK, I'm up. Yah, I'll see you on two meters in five minutes. ‘Bye." I groan.

My ever suffering wife remarks, a voice in the darkness, "Well, you asked for it."

"Unnhh. Yes. Don't remind me. But I'm sorry it woke you up too."

"Oh, that's OK. I always like to wake up for a few minutes at three AM, so I can be thankful I'm not a DX'er and go back to sleep."

I ease into my bathrobe and slippers, already laid out next to the bed in a futile hope I wouldn't wake my wife, and head down the stairs. I'd love a cup of coffee, but I'd probably lose any hope of sleep for the rest of the night if I did.

The basement shack is cold, and I'm glad my slippers have a lining to them. I switch on the main power switch, bringing the gear to life, and pick up the two meter microphone. "Hey, K9QVB, here's W9KNI. How's twenty?"

"Yeah, good morning Bob. W9KNI from K9QVB. Twenty's pretty good into the Pacific. The ZL's are banging in nice and loud, and so are the VK's, and there's an FK with a few people chasing him at fourteen oh thirty one. But no sign of the ZK3, or anything else good."

"Right, OK, John. Thanks for the info and the call. I hope I'm waking you back up in fifteen minutes. Get off to bed now; I'll catch you here on two meters tomorrow evening. K9QVB, here's W9KNI."

"OK, Bob. Yes, that would be just fine, buddy. OK, I'm gone. Good night. W9KNI, here's K9QVB clear. Good hunting."

I look over the equipment, giving it all a quick check out. The antenna is on Africa, guess I'd better pull it around to 259 degrees, the bearing from the mid-west for the Tokelaus; I start the rotator swinging the antenna around. I slip the headphones over my head, and start tuning. The ZK3 has always been reported between 030 and 045; I'll watch that area especially carefully, but I'll keep watch pretty well over the entire CW band. But first, let's have a look inside that zone.

I spin the dial to 030, and almost immediately come across a signal well over S-9, going along at a fine clip and a pretty fist. Within moments, he turns it over to his contact, a VE7, OK, it's ZL1MH. Hmm, the band can't be half bad for sure with signals like that. Which is good; while I have no direct reports on the ZK3's signal strength, it can't be anything too terrific if he's running ten watts of battery powered QRP to a simple antenna. But the band seems quiet tonight, and signals loud, so if he does come on, hearing him should be no problem.

I slowly move up the band, getting the feel of it. And it really is in lovely shape; not that it is open in many directions, but it does seem very nicely open to the west and the southwest. Signals stand out sharply against the quiet background hiss, free of QRN, like bright stars scintillating against a moonless sky.

There are weaker signals on the band as well; a P29 is just copyable, as well as a ZS4 trying to open a long path into Africa that isn't quite there yet. Or is he coming through short path, attenuated by the front to back ratio of my yagi? I could turn my antenna around to find out, but since I don't really care except for curiosity, I don't bother.

There are several VK's on the band, and a 3D2 calling CQ with no apparent takers. But I have other fish to fry; I tune on. It's sad that such fine conditions often occur when most DX'ers must be in bed. I hear the FK that John mentioned finishing a QSO, then, very weakly, several W stations calling him. He has a nice S-8 signal, while his callers are only just copyable. It sure is nice sometimes to have no short skip, though it can be very frustrating in pile-up conditions. But with conditions like they are tonight you know that virtually every station you hear is DX.

I glance at the local time clock; it's 3:20 AM. I still have forty minutes to go on my watch; then it's W9RY's turn. Funny how I'm so wide awake; I'll probably never get back to sleep. Oh well. If I feel that good, perhaps I'll keep Hal's watch and let him sleep. I

K3SUK

must be crazy. But what do you expect? I'm a DX'er. And after all, you don't have to be crazy to be a DX'er, but it sure helps.

I slowly keep working my way up the band, till I'm at 065, when a digital station reminds me I'm pretty high; I move the receiver back down to 030, and start climbing higher again, trying especially to dig out every weak signal, and see who it is. There's one, calling CQ. Hmmm. Oh, it's a K6. Let's see if anyone comes back. He's probably fishing for Europeans or somewhere where we don't have any propagation. There, he signs. Yes, there's a weak signal coming back...

It's him! It's the ZK3! I tear off one headphone, and jam the telephone hand set into one ear, listening to the frequency on the other. I'm punching K9QVB's number with one hand, trying to hold the phone with the other, while I wait for the K6 to have his QSO.

Hey! the K6 didn't come back to the ZK3! The frequency is quiet. I punch the synch button on the transceiver and grab for the paddle. I haven't got the linear running; the K6's failure to respond to the ZK3 caught me by surprise. QVB's phone is ringing, but I can't pay attention to the phone and send at the same time. I lay the phone handset on top of the keyer, turn the keyer monitor on, and start calling the ZK3. Maybe I can get him barefoot. As I call, I turn the gain up on the keyer, so that if when QVB answers he'll hear the CW, and know what's happening.

With bated breath, I listen. There, he's coming back. "QRZ QRZ W9? ? DE ZK3KP AGN K" As he starts the QRZ, I bang the linear power switch on, and watch the plate voltage needle come up. I quickly switch the RF watt meter into the high range, and put one hand on the drive control of the exciter. I start my call again with reduced drive, quickly bringing it up till the linear is perking along with the correct amount of drive, "DE W9KNI W9KNI W9KNI KN".

Again, I listen, anxiously. Yes! There he goes, music to my ears, "W9KNI W9KNI DE ZK3KP R GE OC ES TNX QSO RST 589 589 NAME KEN KEN PSE QTR? QTR? W9KNI DE ZK3KP..." I shove one earphone back, and pick up the phone again. But even as I do, the two meter speaker opens up, "OK, Bob, I'm here. What frequency? Here's K9QVB." I hang up the phone, then pick up the two meter mike, while I try to copy the ZK3.

"Fourteen-oh-three-seven. Call the rest of the fellows. I'm in QSO." Naturally, I'm terse, and probably not speaking too clearly, but no problem; John understands.

"Roger. Congratulations. I'm calling now."

As soon as I know QVB is on board, all my concentration is on the ZK3. And he IS pretty weak, only really just enough signal for adequate copy. But I get all the important things. He turns it back to me.

"R FB KEN ES TNX QSO ES NEW COUNTRY UR RST 549 549 HR NR CHICAGO NR CHICAGO ES NAME BOB BOB QTR IS 0907Z 0907Z VY PLEASED TO QSO U AS 6 OF US BEEN HUNTING YOU IN SHIFTS HI HI GLAD CU WITH GUD CONDX HW CPY ZK3KP DE W9KNI KN". My longer than normal transmission helps give the rest of the lads time to assemble. I hear QVB talking to Hal on two meters, but copy of the ZK3 is not easy, and I turn the 2 meter rig down so that I have less QRM.

"R W9KNI DE ZK3KP R FB BOB ES TNX INFO YES CAN ONLY OP EVERY 3 DAYS WHEN BATTERIES CHARGED FM SOLAR PANEL SO GLD CONDX GUD ES THAT U FOUND ME BT WATCH IS BROKEN SO TNX QTR PLS CALLS OF UR PALS QRV? RIG HR 10 WATTS TO GP HW CPY W9KNI DE ZK3KP KN".

"R ZK3KP DE W9KNI R FB KEN ES TNX DOPE ES PALS QRV ARE K9QVB K9QVB W9RY W9RY W9NUD W9NUD AI9J AI9J ES K9MM K9MM ES TNX KEN FOR QSO ES NEW ONE RIG HR KW ES 4 EL YAGI BT UR QRP FB HR OK KEN NOT KEEP U ES OTHERS QRX SO 73 ES TNX AGN ES GOOD DX ZK3KP DE W9KNI SK"

"R W9KNI DE ZK3KP FB BOB ES TNX VY MUCH FOR QSO GLAD TO QSO U ES UR PALS 73 QSL SURE SK NW K9QVB K9QVB DE ZK3KP KN"

Phew! I turn the two meter rig back up as I hear K9QVB calling the ZK3, and starting to give him a report. "Hey, Bob. Nice work there! Here's K9MM."

"Yeah, good work there, Bob. Looks like we're into a good one, from W9RY." And the rest of the fellows on frequency offer their congratulations as well, both for my getting through, and for the knowledge that they are next.

It's a good feeling; knowing that we've worked together to raise a rare new one. Winning as a team is fun in DX'ing too, especially when it's your pals, and all have worked and sacrificed to snare a real trophy.

And, working a station like the ZK3 is particularly satisfying in other ways as well. All the elements of an exciting game were there; the early scouting reports, determining an operating pattern from incomplete data, developing a strategy, getting together a team, and winning the objective. Yes, logging the ZK3 is particularly satisfying.

I listen as the other fellows get their reports, and get into the ZK3's log. Under normal circumstances, a list type operation such as this would not be a very satisfying way to work a rare DX station, but in this case it is the culmination of a team effort, one that any of us might have initiated. And considering the hour and the long skip conditions, it is unlikely that there is much of a Stateside pile-up champing at the bit awaiting their crack at the ZK3.

The ZK3 finishes with the last of us, and as soon as he does I spot him onto the spotting net. Until then no one else had done so. After a few more minutes of mutual self congratulations, we break the impromptu net; after all, it is nearly four AM.

But I know I'm not yet ready to get back into bed; I'm too wide awake and still excited. I get a glass of milk, and tune for a few more minutes, while I try to compose myself.

The CW end of the band seems rather quiet, and I move the receiver up into the SSB reaches of the band. Signals seem to be getting weaker; often the case in the predawn hours before the band starts building towards the sunrise peak. But as I ease my way up a bit higher, I trip across a rather strong signal, one with a rather definite Australian accent. I pause a moment to listen, to see who he is; the other signals from VK land are now rather weaker.

"Righty-ho, then, mate. Now that we've established our base camp, we'll be gone off down the coast for about ten days, but I should be QRV again as soon as I get back. But I'm just not going to be able to be very active, we're going to be very busy while we're here, and three weeks really isn't enough time to do the job at all, but that's how it is. I'll be looking for you at the usual time and frequency, same as now. Dinner's called, I have to run right now. Give my love to Sylvia. VK6RS, here's VKØAH, Macquarie Island, off and clear and pulling the switch. Cheers, mate."

Hey! Macquarie - another one that I need! I do a panic QSY with the rig, and give him a quick, "VKØAH, here's W9KNI, W9KNI, you're five by eight, five by eight, go ahead," in hopes of snagging a quick QSO, but there is no response. He must have really meant it about going QRT, and it's obvious I'm not going to nail him tonight. And it's equally obvious that if I'm to have a chance to nail this one it's going to mean a lot of lost sleep and careful tuning. But a shot at Macquarie is a rare event, one I don't dare miss out on. It may be a long time before I get another shot. The season is a bit unusual for an expedition to Macquarie, being nearly the dead of winter in that hemisphere, but governments everywhere have a logic of their own.

I make notes on the VKØ on my little blackboard, turn off the gear and head for the sack. It's obvious that I'd best start trying to get a bit ahead on my sleep; in ten days time I'm going to be needing all I can get. But what choice do I have? Any DX'er understands that.

21

Equipment and Accessories for the DX'er

To be able to work DX, at its simplest you need an HF transceiver – or receiver and transmitter combination – an antenna, headphones, a key and/or a microphone and little else. Certainly, this can be a rather minimal approach, but with these relatively simple tools you can be a DX'er, experiencing the thrills. If you are a long time ham, remember the fun you had starting out with limited equipment, when each DX contact was a special thrill. A clean, simple station with limited equipment can still be a magic carpet for the would-be DX'er.

The author does believe that an output of 100 watts ERP – effective radiated power – is pretty much the minimum for a new DX'er not intent on heroic frustration. This means having a transmitter of 100 watts and a simple antenna, like a well installed trap-free multiband vertical with a good set of radials, ground or roof mounted, or several high and clear dipoles for the primary DX bands. This combination is all that is required for years of pleasurable DX operating. Again, the same ERP could be obtained by having an efficient tribander on a tower, and running

10 watts. If you can add better antennas and/or more power, you will increase your effectiveness, but rest assured, the basic 100 watt and simple antenna setup can and will work wonders.

It is the intention of the author in this chapter to give advice on selecting some of the tools that help the DX'er, rather than making hard recommendations. And, this chapter is hardly exhaustive. Hopefully, it will give you a few ideas and some guidelines on selecting equipment for your shack. Tranceivers, antennas, paddles etc. are not commodities, in that one is just as good, just as reliable and as pleasant to use as the next one – they simply aren't. As with most products in other fields, there are very good products available, and other products that look much the same, with similar or even better specifications quoted, that are plain and simply junk. And price is frequently not the arbiter of quality – there is very good equipment offered at very competitive prices, as well as very expensive equipment that would not offer good value at half the price.

Let's start with the rig – the transceiver. One way or another you need to be able to receive and transmit on the HF bands to work DX. Almost everything available today comes in the form of a transceiver. In days past the receiver and transmitter were two different pieces of equipment, and many used radios are still available. Some of them offer excellent performance even today, such as Collins S-Lines, the legendary Collins 75A4, Drake equipment, Heath etc. If you have the skills to keep such gear in repair they offer a viable approach. One word of warning – in many such pieces of gear the bandswitches are the weak link, with repair parts impossible to obtain. That said, we will concentrate on transceivers; the same characteristics being valid for both.

It is impossible to buy a rig with a receiver that is too good! But what defines a good receiver? Most receivers today have good to excellent sensitivity, and excellent stability. What really separates the best from the rest is the quality of the front end - the more bullet-proof the better. This means that very strong signals near the frequency the receiver is tuned to will not be detected as long as they are outside the desired receiving passband.

A good receiver either comes with or accepts as accessories the filters you will want – wide and narrow filters for both SSB and

CW are very desirable. There are a load of other features, some or all of which will be found on various commercial offerings, such as noise blankers, passband tuning, RIT, and on and on. Some transceivers even have not one but two receivers built in, so that more than one band may be monitored simultaneously. No manufacturer offers anything that is deficient enough in these areas to render their equipment unusable.

The author firmly believes that the most important characteristic to look for in a DX receiver is the bullet-proof front end. Such a receiver is ideal for finding weak signals on a crowded band and being able to get good copy. A receiver with a lesser front end but the same or even better sensitivity is badly handicapped on a crowded band, especially if signals are strong. The noise threshold of the poorer receiver subtly rises, burying weaker signals. Garbage intermod products offer interference to the signal you are trying to copy, interference you think comes from a QRMing transmitter on frequency. But in fact the QRM is receiver-generated intermod products from stong signals off frequency you can't even hear.

In the last few years, excellent equipment reviews from ARRL in QST Magazine and other sources have included very meaningful measurements of the quality of the receiver performance in this area. If you are looking to make a change in your equipment, or buying your first HF transceiver, study these reviews carefully. Study the terminology used, and, even more important, come to an understanding of what the specifications mean so that you can intelligently consider them. You don't have to have the very best rig in terms of these considerations to be effective and have fun, but at the least you want one of the better ones. And surprise! The price is not necessarily closely related to the performance. Some very good equipment can be had for comparatively modest prices compared to some of the other gear.

Your author changed rigs three years ago, going from a transceiver sporting multiple IF conversions to a simpler rig based on single conversion. There are considerable differences. The double and triple conversion rigs offered today are marvels of sophistication and feature-rich. Signals are heavily processed to reduce or eliminate interference.

The single conversion transceiver used today as the author's rig lacks many of the bells and whistles, as well as the high price.

But price was not the point. The rig was originally built from a kit as something of a lark, with no thought or intention of having it replace what had been the main station transceiver. But the performance and sound of the receiver in the new rig quickly won the author's heart and mind. Its strong front end outperforms most of the more complex rigs, and it excels in receiving weak signals when extremely strong signals are close by in frequency. Signals coming through are not heavily processed; instead the rig is very "transparent", doing little or nothing to color the received signal. The AGC is extremely smooth. When listening to an open band, there is no question about whether a signal is strong or weak – it is very obvious. Yet, weak signals are easy copy, even with much stronger signals inside the passband. For the author's taste, the receiver is an absolute delight to use on an open band.

That the rig's transmitter offers full solid-state performance, excellent keying and full QSK with no T/R relays does not hurt the situation either!

That said, some of the author's friends, friends who are very effective and experienced DX'ers and contesters, have tried the same rig, and have gone back to the more complex designs, designs that feature multiple stages of conversion, techniques such as DSP along with crystal and mechanical filtering. They prefer the heavily processed signal and the greater reduction of other signals, as well as the additional controls offered by the more complex designs. In the fancier rigs, the AGC tends to flatten signals so that fairly weak stations and very loud stations sound a good deal more alike.

Other friends, again, competent, experienced contesters and DX'ers, have tried the simpler rig and like the author are delighted with the change.

The point of all this is that selecting a choice of designs can be more difficult than it might seem. There is no specification the author is aware of that suggests the differences between a "transparent" sounding receiver and a receiver delivering a more heavily processed signal. It is even hard to describe the differences in writing about them! Yet, the differences are very real. If you have to make such a decision, the author urges if at all possible that you try both styles of design. This is indeed an area where today there is more than one valid design approach.

Transceivers also include a transmitter section. In equipment currently offered, the greatest weakness in some radios seems to be their CW transmit capability. Some radios have significant key clicks, and some truncate a good part of each dot and dash sent. This appears to be something of a sensitive subject – this is one area where magazine reviews won't usually come right out and tell you a transceiver is a poor CW rig. The reviews almost always publish keyed waveform charts, and often even explain what they are showing in technical terms – but they shy away from describing what is being shown in plain language, making it difficult for the less technically inclined to get an idea of how CW transmitted from the radio sounds in real life. Unfortunately, some current radios are real dogs.

If you have any thought at all to ever use CW, be very careful in buying a new transceiver to make sure it is a capable CW rig, both in receive and in transmit. Study the reviews, and learn how to interpret keyed wave form depictions. Listen to hear the rig on the air – if needed find an owner and ask for a schedule. For most people buying a transceiver is a major purchase, and one intended to serve for years. You want to be sure to get it right.

Another area where virtually every transceiver is seriously deficient is the built in keyer. You should know that the author has a vested interest in this, of which more later. But the fact is that the keyer in virtually every transceiver today is a sadly deficient product. To look at the specs offered they would appear to be competitive with anything on the market. But in truth while they might have the same number of memories etc. they simply do not have a comfortable "feel" to them that makes CW pleasant.

Idiom Press, the publisher of this book, offers a line of keyers that we immodestly state are unmatched for sending comfort and accuracy; simply the best. For a comprehensive discussion of this subject and product offerings, go to the Idiom Press website at www.idiompress.com.

Most DX'ers eventually add a linear amplifier to their station. The addition can be a very cost-effective way to increase your signal strength on all bands. As with most every thing else, there are linears that represent good value, and linears that probably should not be bought at any price.

A little thought can go a long way towards buying what is right for you. The first question to be asked is to describe your operating? Do you tune the bands for hours, rarely touching the mike or paddle, and then usually content to call barefoot, but who would like the afterburner available for when you suddenly really really need it? Or are you the kind that eases into the operating chair, flips on the gear, and looks forward to putting a bunch of QSO's into the log?

If you are the solitary hunter, rarely transmitting, you will value a linear that can go from cold to full output within seconds. This means not switching the linear on at the beginning of each operating session, thereby saving a lot on the electric bill, both from linear idling currents and from less air conditioning. Such an amplifier typically use glass tubes, like 3-500Z's, though certain ceramic tubes also capable of this type of exercise.

If you like to operate with the linear on, amplifiers such as those referenced above will certainly serve, but you may well prefer an amplifier with ceramic tubes. Some beautiful products are available in this class, many of them fully autotune, so that all you need do is change bands on your transceiver, with the linear automatically following suit and automatically tuning itself for that band. The biggest limitation – besides price! – of these linears is that they need to be turned on somewhere between 90 and 180 seconds before they are ready to transmit. This can be an eternity when you have found yourself an all time new one and before you manage to log him you see him being spotted on the net by someone else for the whole world to see.

Solid state linears are becoming available capable of virtually instantaneous operation, and are a promising development, but they tend to be power limited at present, typically good for 1000 watts output and as expensive as the fancy autotune amplifiers. Most American DX'ers at least take the view that if they are going to spend that kind of money for an amplifier they darned well want the full 1500 watts they are allowed.

There is much more to the selection of a linear but we will depart the subject here. Our main point is for the user to determine whether an "Instant-On" linear makes more sense for the buyer than a linear that requires a warm-up interval.

There are a number of other accessories that will make the DX'ers life easier and more effective, and even more comfortable. Although some of the modern transceivers seem to feature every possible control and feature, including a good many that will never be used, there usually is still a need for a few items to make the station more effective.

The first one we will discuss is actually is a technique, rather than an accessory. Headphones, which virtually ever DX'er uses, are normally wired in phase, so that the apparent source of signals heard is outside of the head, and of course it is. But, reversing the phase of the headphones will make the apparent source of the signals seem to come from the middle of your head. This change, though subtle, is rather advantageous for copying CW in QRM and QRN, especially in weak signal conditions.

Reversing the phase of the headset is usually a rather simple procedure, requiring only the reversing of the leads going to one of the elements and leaving the other as is. In most modern headphones, a mini-speaker is used as the transducer. Usually, the side to reverse is the far side, the side away from the plug lead. Try it. It's well worth the effort.

A very useful addition for all but a few of the most recent receivers and transceivers is a good audio filter. A good filter will help eliminate white noise, both for CW and for SSB listening. It will help a great deal in digging weak signals out of the mud. And a good filter will reduce operator fatigue.

Again, your author has a conflict here, because his business, this book's publisher, Idiom Press, markets a very useful outboard audio filter. It was originally created to make DX tuning and operating more pleasant for the author, who personally believes in and uses products he offers. Idiom Press is dedicated to offering good products of good value to the amateur radio operator. Details on the Idiom Press filter and other products of interest to DX'ers can be found at www.idiompress.com.

An aspect frequently ignored by the DX'er is the choice of microphone. Far too often, the selection criteria for a microphone is styling, cost, or "compatibility" with the transmitter - meaning that it comes from the same manufacturer. A moment's consideration should suggest that none of these criteria have any bearing on cracking pile-ups.

A DX'er's microphone should NOT be chosen on the basis of fidelity or "natural" sound. The microphone should offer a cardiod pick-up pattern, and emphasize the high frequency components of the voice, rather than the low. The only real test of a microphone is its effectiveness in a pile-up. However, if possible, different microphones should be tried, perhaps in a contest situation, to develop a feel of which is best for the individual operator and his equipment. Find a huge pileup on SSB. Put yourself in the DX station's shoes, and listen to the callers, paying particular attention to the sound of their audio. Figure out what sort of signal busts through the pile-up to your ear. This should quickly give you an idea of how you want your signal to sound in the next pile-up.

Try to test microphones on your rig before buying. Have a friend listen, in such a way that your signal is weak, not strong, at his QTH. This can usually be done by going to an antenna for a different band, or even no antenna at all. If possible have him record your transmission so you can listen to it in light of the audio you are trying to achieve.

Certainly, this is hardly a definitive piece on the selection of a microphone, but if it gives you the idea that some microphones are far better than others for DX work, you are well started on the right track.

Although a brief discussion of keyers is in the above material, there is also room for discussion of paddles. Candor requires of the author that he mention that he is a part owner of Bencher, Inc. a maker of CW paddles. Again, the author uses and believes in these products. That said, the following material should remain useful for anyone looking to buy a paddle.

For the CW man, the paddle and keyer are among the most important accessory items in the shack. The paddle should be comfortable enough for the operator so that in the heat of battle over a new one he never has to give a thought about his paddle or his sending; it should be second nature. This of course requires proficiency gained by practice, as well as a good paddle.

There are several important considerations to look for when choosing a paddle, be it iambic or single lever. For one, it should be heavy, so that it will stay put instead of having to be chased around the operating table. For another, there should be a definite tactile response to keying action. In other words, when you close one side of the paddle, there should be a click noise, and a feeling to the finger that the contact definitely closed. Some paddles have a rather mushy feeling when closed, leaving an uncertainty factor for the operator that slows his response and in turn his top speed. Clean, precise sending requires a positive feedback response for the operator when he or she closes a paddle contact.

The closing tension for the dot side and for the dash side of a paddle should be separately adjustable, as most operators will have a differing preference for each side. It is amazing to the author how many relatively expensive paddles have but a single adjustment for both dot and dash sides.

If a new operator is buying his first electronic keyer and paddle, he should definitely choose an iambic paddle, and learn iambic "squeeze keying" techniques. Iambic keying is a more efficient way to send a number of the letters of the alphabet, notably C, F, K, L, Q, R, and Y. People experienced in iambic sending are able to send at a faster and more comfortable rate, with less work, than operators on single lever paddles.

However, many amateurs have grown up using old bugs, and proceeded on to single lever paddles before the iambic technique was developed, and for these operators, the single lever paddle is still capable of excellent work. Such operators can learn to convert from single lever techniques to iambic techniques – the author did so – but it is a hard conversion to make.

Newcomers without the bug and single lever background should start right out with the iambic paddle; indeed, they are advised to stay away from single lever keyers and bugs. The habits needed to send good CW on a single lever paddle or on a bug are completely and mutually inconsistent with iambic sending techniques. Iambic technique if properly used is much more efficient than sending CW using a single lever paddle or a bug.

There are a huge number of computer programs available today that can be of real benefit to the DX'er. It is inappropriate for a book like this to even attempt to list them all. The author – like all authors - hopes that this book will be cherished for years. But commercial realities can change rapidly, especially on anything having to do with software. Among the programs worthy of attention by the DX'er include offerings that show world maps with sun and darkness, programs that give propagation information, programs for tower ratings, programs for antenna design, and especially logging programs.

The author must confess that at present he continues to rely on paper logs – there is a special satisfaction to writing in the details of a particularly good DX QSO into the log. Also, the author finds that a goodly part of his working day is spent in front of a computer screen. In an effort to keep work and hobby separated to the extent possible, and also because the author lives in the country where dial-up internet access is the norm, a computer does not sit on the author's operating table. One is at close hand however.

That said, some of the computer logging programs available are stuffed with extremely useful tools for the DX'er, and are designed to be fully integrated into your station. They monitor spotting nets, can move your gear to a new frequency – such as one where a new country is spotted – point the antenna in the right direction and log the QSO once worked. Then they can print the QSL and address it for you, all virtually automatically. Some can even arrange to call you on your cell phone or pager to alert you that a new country has been spotted on the spotting nets, so you can drop everything and race to the shack! They can build databases of the activities of needed stations from spots, remind you of outstanding QSL's and organize your applications for new awards. Their record keeping capabilities are invaluable.

But please – for your own long-term enjoyment of DX'ing, do not let these programs mesmerize you. Do not let them take over your DX'ing interests, such that you never are on the rig listening unless the logging program/spotting nets have summoned you to fill in another blank on some award page. Logging programs are tools – wonderful tools – but that is what they are – TOOLS! Use them to assist you and your hobby – not to control it!

The resources for the DX'er available on the internet are mind boggling. Trouble getting a QSL? Go to one of the major search engines and type in a call. Chances are good the answer is instantly at hand. Looking for a used linear? Ask the search engine to look for used ham radio equipment listings. You’ll find several of them at the least. Problem with an old piece of equipment? Right – go to the internet search engine. There are a number of excellent web sites, offering all kinds of information – web-based call sign directories, DX Bulletins, both fee based and free, discussion sites, sites dedicated to towers, to antennas, to contesting, to DX’ing, to all kinds of equipment, anything a DX’er could want.

Again, because things change rapidly, this book will not offer a list of internet resources – rather, use an internet search engine and look for "DX" and you are off to a good start.

A DX'er serious about the world he is working will be interested in a good atlas. Whenever the writer works an interesting DX station, he tries to find the exact location of the other station in an atlas. A paperback Penguin Atlas is kept on the shack table for quick reference, while two larger and much more comprehensive atlases are kept elsewhere in the house for further reference.

The problem with most of the more readily available "World" atlases is that they always give enhanced coverage of the country of origin, and short shrift to the rest of the world. It seems a bit inconsistent that one atlas claiming to be a World Atlas has 65 double pages for the American States, and thirty-two single pages for the rest of the world, with an index to match. To test any atlas for quality and worth to the DX'er, try to find Pagalu Island (3C0)(also known as Annobon Island), Crozet Island (FT), and Bouvet Island, (3Y).

There are two atlases the author considers far and away superior to most of the offerings. The most comprehensive and complete atlas is the "Times Atlas of the World," Published by the Times of London. Though expensive, this is the most definitive work the author is aware of. Its biggest weakness is the lack of standard projection maps of the oceans, making location of some of the exotic island groups difficult to relate to other spots. In every other respect, it is a superb work, and the index is unsurpassed. It is available in better book stores, and via internet retailers.

Perhaps a better value for the money is the "National Geographic Atlas of the World." This atlas, while not quite as comprehensive as the Times of London Atlas, is not far below in quality in any way, and is significantly less expensive. And, it includes excellent maps of the oceans that the Times Atlas lacks. The National Geographic Atlas can be purchased through the National Geographic Society of Washington, DC. Either atlas is a superb addition to your library.

There are, of course, a great number of other accessories available for the DX'er, and many of them are virtual necessities in a well equipped shack. Examples include RF watt meters, speakers, 24 hour clocks kept on GMT time, not to mention a good basic library of technical works, such as "The Radio Amateur's Handbook". Enough said.

Attention should be paid to keeping important spares available where it is economically feasible to do so. Murphy's Law guarantees that the surprise new country will become QRV for a short period while your rig is out of service. Many DX'ers, if they can afford to, do not sell off old equipment when buying a new rig, but rather keep the old gear as operating spares should the newer equipment fail.

Antennas, too, offer an opportunity for planning for disaster. For example, it is certainly a wise policy to have a multi-band vertical stored away that can quickly be erected under harsh weather conditions the day after you've lost your HF antennas to an ice storm in mid-January, knowing that it will be March before the weather moderates enough to repair the damage. Indeed, it is wise insurance to lay down the radials for the vertical in summer, and install and tune the antenna, then if it is not needed for normal operation store it away such that in a matter of minutes right after the January ice storm you can be QRV again while writing up the insurance claim for your tower and yagi.

Except for that statement, antennas are covered in more detail in another chapter.

22

Special Language Techniques

"Hey, W9KNI, here's W9BW. Hey, Bob, was that you I heard parley-vousing with that French station? I didn't know you spoke French."

"W9BW, this is W9KNI. Yeah, good evening George. That was me. I'm pretty bad, though. I'm trying to learn at least a little ham French. Maybe enough to get lucky and nail one of the terrible `T's. I have a suspicion at least a couple Africans I need are on, but only working in French to avoid big pile-ups, and I'm trying to learn enough to make the grade."

"Hey, good for you. Sounds like a good way to go after them. So how's the studying going?"

"Not too bad. I can muddle my way through a contact without chasing away the fellow at the other end. In fact, they almost seem eager to talk to me in French, even though I obviously know very little. At least no one has quit coming back to me. I started with a couple VE2's, and since then I've worked two or three F stations, and a Fox Mike Seven. I'm trying to get more familiar with it before I go hunting bigger game. And I still don't have the alphabet down as well as I would like. It's a bit different in the pronunciation from English."

"Yeah. You wouldn't want to have TN8BK come back to you and you log him as TR8BK, haw haw."

"You got that right! And TN8BK is one of the stations I'm hoping to snag. I think he's the only fellow on from there, and I need that one bad."

"Yeah, I can understand that. I got lucky a few years ago and worked a fellow there who was running 15 watts to a dipole. But he QSL'ed right away and it counted OK, and that's always been a rare one. Good luck with it anyhow. What are you using to study?"

"Well, I have a couple things. I've got my kid's freshman French textbook. And my buddy F2MA made a CD for me of the French pronunciation of the alphabet, and some simple QSO French as well, and I've been playing that over and over. So I think I'm nearly ready."

"Sounds good. But don't a lot of those fellows in Africa, especially the French speaking ones, hang out below our phone band?"

"Yeah, I think so. My plan is to listen down there and try to raise them on CW if that's where I find them. But maybe they work higher in the band too. And I'm going to try some CQ calls when I feel a bit more confident. I thought I'd try them at times we don't have propagation into Europe but we do into Africa. That may make it easier for me to cope."

"Yeah, right, you got to do something to keep those pile-ups down. Hey, it all sounds neat. But I have to run now. Good luck with it. W9KNI, here's W9BW."

"Roger. Fine George, I won't keep you. W9BW, here's W9KNI clear."

I put the two meter mike back down, and start tuning the bands again, thinking about that conversation, and my plan. I've got pretty well everything worked I've heard on the air, and the only chance I have of snagging a new one without waiting for a DX'pedition to hit is to try to smoke out a few of those Africans. I need the TN8, a TJ1 and a 5V7. All are French speaking countries, with mostly French speaking hams. While I don't KNOW there is activity from those countries except for the ever-elusive TN8BK, it's my best shot for a new one right now. And, there may be another TN8 on besides Dr. Bernard, TN8BK. Maybe if I work hard at it I'll get lucky...

A cold, blustery January afternoon offers what may be ideal conditions for my quest. Twenty meters seems to close up tighter than a drum practically at the same time the sun goes down, even to the South Americans. By 7PM local the last few weeks, the band is a very large dummy load. That condition must be the same along and east of the Greenwich meridian, and the more so for the European stations further north, farther from the sun. That means the band on their north-south path is dead too around 7PM local time, probably even earlier.

But for stations nearer the sun-bathed equator, twenty should still be open. But the path north to Europe is closed. So, the French speaking stations in central Africa wanting a QSO on twenty meters in the early evening hours local time are going to have to look for stations somewhere else to work. Like us. Because it's still early afternoon local time for us, and we still have good propagation, including a good path into central Africa...

"Appel vingt metre appel vingt metre, CQ vingt metre, ici doubla-vay neuf kah en ee (W9KNI) doubla-vay neuf kah en ee, appel vingt metre appel vingt metre..."

"W9KNI, W9KNI, ici Tay oo deux err koo, tay oo deux err koo qui vous appelle et passe a l'ecoute."

"Roger. TU2RQ, ici W9KNI qui revient, et merci beaucoup, cher ami..." Darn. A TU2; I have that one confirmed. But what the heck. You can't expect to call a sloppy CQ badly in someone else's language, and expect to only get new countries to respond. The fellow's doing me the favor in responding. I better pay attention here or I'm going to be in real trouble.

I follow my cheat-sheet closely, then turn it back to him. He comes back. Thank goodness, he seems to realize that I'm certainly not proficient in French; he gives my signal report very slowly, and then does his QTH and name letter by letter. But getting Abidjan correctly would have been a bit tough if I hadn't read it off a QSL on the wall as he was spelling it out for me. His name, Claude, turned out to be easier, he didn't have to do it letter by letter for me. But he did.

What's that he's saying? He's going slowly and deliberately, and I think he's trying to be helpful; that would mean it has to be either about his rig or the weather. Yes! Emitteur means transmitter. Right. OK, 150 watts. And the French words for antenna and yagi are almost exactly the same as in English. Douze metres; yes, he's telling me that his yagi is up 12 meters; that's about 40 feet. OK, he's turning it back.

Back to the cheat-sheet. I tell him about my rig and antenna, then the weather. I comment that my French is QSO French only and that I know very little more, so please excuse me, QRU etc. and turn it back to him again.

"Roger, W9KNI here's TU2RQ. Fine business, Bob. Not to worry, I speak English too. But you started in French, so I stayed with French. It is very nice to work an American station speaking in French, and your QSO French, as you call it, is very good..." He is, of course, being polite, my QSO French has to be very poor, and an assault upon his ears and his sensibilities, but he did understand it OK. And he seems genuinely pleased that I tried.

We ragchew a bit further, mostly in English. He tells me he is from the Loire valley in France, and that he is an economist and a civil servant of the government of the Ivory Coast. I tell him of the one time I visited Paris, and of my misadventures in finding a decent hotel. He finds that very funny; it seems he had an identical experience the first time he visited Paris.

I ask about stations in other parts of Africa; about the ever elusive TN8BK, about possible TJ1's and 5U7's. Claude tells me that TN8BK is actually fairly active, almost daily, but that he rarely signs his call, and only QSO's in French, though Claude is fairly sure that Dr. Bernard speaks fluent English. BUT, he is on holiday in France at present, and Claude does not think he is expected back until March.

However, Claude also has heard several times recently two new stations from there, TN8AJ, who apparently QSO's mostly in German and a little English, and TN8BP, who QSO's in French. So there yet may be hope. Claude tells me as well that there are at least four TJ1 stations on; one he says QSO's only in Dutch and mostly on long schedules to a girl friend back home; but the other three are active in French, and he is confident that if I watch for them in French, I am sure to get at least one of them.

He agrees that this a good time of year to chase them, because he can only work Europe in the evening hours on forty and seventy-five meters, and he doesn't like either band, as forty is full of very strong broadcast signals beamed to Africa by the different European countries, and the tropic QRN levels on seventy-five meters makes contacts unpleasant.

We end our QSO, having had a very pleasant rag chew. I have a very definite feeling he would not have come back to me if I had not tried the French CQ. There are a number of stations calling him when we sign, but he comes back to none of them, apparently having gone QRT. Well, I didn't get a new one out of it, but I had a very pleasant QSO, and got some excellent DX info as well. I'm certainly going to try it some more...

My further attempts at French CQ's over the next few days yield no spectacular results. I keep working at it, however. Each day as I drive to work, I play the alphabet CD over and over, which also contains a few simplified QSO's in French. And I listen a good deal on twenty meters in the French phone band. Most of the French speaking stations seem to hang out between 14105 and 14130, and I listen to them eagerly.

My continued practice improves my understanding to the extent that I can recognize most call signs with ease and accuracy, and follow most QSO's reasonably well, at least into the second or third "over." And I enter into QSO's in French more often as well. Most of the French speaking stations I QSO seem extremely pleased with my rudimentary efforts, even though I find out that almost to a man they speak far more English than I speak French.

I have one other very interesting QSO as well, when a YV5 answers one of my French CQ's. His English is rather poor, but his French seems excellent; at least it's a good deal better than mine. So we have a surprisingly good QSO in French. It is a second language for both of us, and probably that is why we do so well. But still, I do not raise any of the good Africans I seek.

Things start turning better the following weekend. I am listening carefully to the French phone band on another cold, blustery Sunday afternoon, when I trip across a station signing clear with another station. The station transmitting is going through the usual courtesies, and signs the call signs; yes, "FY7SR ici TN8BP, Brazzaville, qui passe en QRT. Au revoir."

It's a TN8! Needless to say, I become like an octopus in a paper hanging contest, as I try a panic call on CW, since we W's have no phone privileges in that part of the band. But my luck in that sort of situation runs true to form - zero. He must have gone QRT as he had said he would.

But, all is not lost. I heard him, and now I have a time and frequency to watch. And, while I can't say I'm sure to recognize his voice again, at least I have some idea what it sounds like, which is sure to help in my hunt. Not to mention the very fact that I know now for sure he is QRV helps stiffen my resolve to keep watching for him...

The next weekend turns into a bust for me in spite of my desire to watch for the TN8. A neighbor asks for help Saturday to help move his sick mother; and he is a fellow who would drop anything if I asked him for help. Besides, he suffered TVI for two years without ever saying a word. Once I found out, accidentally, a high pass filter provided an instant cure. He didn't know it would be easy to fix, and didn't want to bother me. Needless to say, I help him move his mother. When I get home, the band is deader than King Tut's pet rock.

Sunday turned out no more productive from a DX'ing point of view, when a classmate of my wife's comes in from out of town with her husband. He turns out to be a delightful fellow, and we enjoy their visit - but no DX'ing for W9KNI...

The following weekend, I hope for better things. There is little I can do to prevent the kind of events that messed up last weekend, except hope for better luck. Saturday morning provides a good opening into Europe on fifteen, while twenty provides a nice long path into the Middle East. But nothing that I need shows up on those openings. As the morning goes by and the propagation paths shift, I start watching the French phone area on fifteen, around 21,150. A number of French stations are on, but most of them turn out to be VE2's in Quebec, plus several FM7's and an FG7. I find a lonely TR8 calling CQ, with a rather weak signal and no answers. But I don't need a TR8.

After lunch, I start working twenty meters over carefully. At first, I don't hear very much from Africa, but then I start to find more signals. A 5N2 operating higher in the band is S-7; I store his frequency, as he seems intent on a long session of working people for some special activity day, and I can use his signal as a beacon to check for signal strengths as the afternoon progresses.

The hunting gets easier as I go. The European signals fade out, leaving any signal in the French phone band likely to be VE2's, FG's, FM's, FY's or Africans. I have to run out for about twenty minutes to pick up the kids at the library, which turns into a forty-five minute trip since they are not ready as promised, and I have to park and go look for them.

When I get back, I check first for the 5N2. Sure enough, he's still passing out QSO's, with a good following of stations pursuing him. And his signal is impressive now; well over S-9, a very good sign indeed for my cause. I flip back to 14,100 and start tuning through the first twenty-five kilohertz. I check the exciter and the linear; yes, they are ready, should I get lucky.

And there he is! "...soixante-treize, cher Jean-Paul, et j'espere que nous vous rencontrerons bientot. VE2BKT ici TN8BP, Brazzaville. Au revoir." I quickly set the transmit frequency so I have about a six hundred hertz note on the frequency and start calling the TN8, very slowly and deliberately, perhaps ten words per minute. The TN8's proficiency in CW is perhaps questionable, as there have been no reports at all of activity on CW by him in the DX'ers Tout Sheet. I give a three by three call, more than I usually would, but I want to be sure to attract his attention. And, I do!

"Hallo the Whiskey Nine station, hallo the Whiskey Nine station on Morse, here is TN8BP. Old man, I regret I must QRT now, and I have not the time for the QSO. But, if you will call me tomorrow at this time, twenty one fifteen Greenwich time, on one four three zed zed, I will watch for your single sideband signal. For now, 73 and I QRT. This is TN8BP. Au revoir!"

I return, even more slowly, as it is obvious that his CW is a bit on the rusty side, "R R QSL QSL 73 73 DE W9KNI W9KNI W9KNI SK SK"

"Roger. W9KNI OK. Until tomorrow." And he is gone. Wow! Already, I have a rudimentary QSO, but for sure I'll be waiting, loaded for bear tomorrow. I quickly make note of the time for the sked, then log this QSO. I'll certainly be there tomorrow...

Sunday, I am all nerves, having slept miserably the night before. It's been a long time since I've nailed a new one; and here I am with a schedule with one of the rarest. I'm more or less used to waiting for the DX'pedition to show, knowing I'm going to be fighting it out at the front lines with thousands of other eager DX'ers; that always keys me up, but nothing like this.

Finally, I trip across one of my G pals calling CQ, and I call him. He comes right back, and we have a very nice pleasant ragchew on QRQ CW. The challenge of keeping my trusty Bencher paddle dancing at thirty-five words per minute takes up my attention, and I begin to settle down. But the band starts to fade to Europe in the early afternoon, and we sign clear. And I start to get nervous again.

It's 1900 Zulu. And I have better than two hours to go. I'm getting more anxious. My wife giggles at me; she is sympathetic, but she finds it amusing at the same time. "Why don't you relax and go for a walk? It's at least twenty degrees out, and not very windy. The walk will do you good, and I'll have hot water for tea for you when you get home. Go on and do it."

She's right. A bit of exercise is what I need to settle down, and with two hours to go I need something. I put on my boots, my heavy coat, scarf, hat and gloves, and head out the door.

The sun is very bright, almost painfully so, as it shines off the snow that lies everywhere, especially bright compared to the soft indirect lighting of the shack. My eyes take a bit of time to adjust to the brightness. The air is cold. I walk rather briskly, and as I walk I feel the nerves easing up, and my stomach settling down. I'm almost able to laugh at myself; an adult man getting up tight over a few seconds of noise out of a box.

The walk turns out to be an ideal solution. In less than an hour, I'm back home, but much more relaxed. I sit in the living room, drinking tea and reading through the Sunday newspapers. After a bit I glance up at the clock. Right; it's 2:58, 2058 Zulu. I head downstairs into the shack, and start checking the gear out.

Lemesee here. I look around 14,300; not a part of the bands that I normally frequent. I find a clear frequency on 14289, and trim my tune up. Yes, it all appears to be functioning properly. I check the SWR; it is within reason. My logging program confirms that the bearing for TN8 from the American Midwest is 84 degrees. I start looking for a clear frequency around 14300.

It looks like that won't be easy. There seem to be QSO's all through the area. I glance at the clock; it shows 2108 Zulu, and I want to start calling. I don't really expect the TN8 to come back yet, but equally I certainly don't wish to leave any chance uncovered.

I get a bit lucky. I hear two fellows, obviously old friends, signing clear on 14302. As they are signing, I break in, they acknowledge, and I ask permission to use the frequency for a schedule. They both affably agree, and sign clear with each other. Before anyone else can try to use the clear frequency, I start my call. "Tay En Wheat Bay Pay, TN8BP, ici Doublavay Neuf Kah En Ee, W9KNI qui vous appelle et passe a la ecoute." I wait a few moments, with no response, and call again. No response. I call again. Nil. It's 2108. I know I'm early, but I want to be sure to have a frequency staked out. Somebody starts calling CQ about five hundred hertz lower. I listen; it's a WB4, saying that he is in Fort Lauderdale, and calling CQ. I turn the antenna down to the south-east, and when he breathes for a moment I inform him that the frequency is in use. He doesn't answer, but he doesn't call any more either. I stay on that frequency.

Quickly, I swing the antenna back to an approximation of 84 degrees again, and call, again in French. I know from yesterday's experience that TN8BP speaks at least some English, but the last thing I need is to draw a crowd of stations waiting for him with me, and calling him in French is likely to stir few or no ripples. It's 2111 Zulu.

I call again, then listen. Oops, "K9AM, here's K6AAR, this spot looks clear Bob."

They don't have to wait long for a response from me. "I'm sorry, K6AAR; the frequency is in use. Here's W9KNI."

"Roger. Sorry about that. Bob, I'll go down another five and down from there. K6AAR, QSY."

I call the TN8 again, again in French. Suddenly, someone is calling me, not in French, but in English. English with an accent. My heart stops, my hair stands on end, my stomach starts a barrel-roll. "W9KNI W9KNI, here is TN8BP, TN8BP. Do you copy? Over."

"Roger, Roger. TN8BP, this is W9KNI. Roger, and thank you so much for meeting me here, my friend. I will give you a signal report on your next transmission. My name is Bob, Bravo - Oscar - Bravo, and my QTH is near Chicago, near Chicago. You are a new country for me, and I am very pleased and excited to contact you. How do you copy my transmission? TN8BP, here is W9KNI, over."

"Roger, my friend Bob. W9KNI, this is TN8BP. Very fine, Bob, and I am very pleased to meet you for this schedule. Your signals are good here, you are five by nine, five by nine here in Brazzaville, in the Republic of the Congo. My name is Emile, Emile. I am very pleased to be a new country for you, my friend Bob. Please send your QSL to F6TLK, F6TLK. He is my manager. Bob, I must go QRT now. The power here will go off very soon. Do you copy? W9KNI here's TN8BP."

As he is signing it over to me I hear the ping from the spotting screen that announces needed DX – hah – someone has spotted him already; yeah, a W2.

"Roger, my friend Emile. TN8BP, this is W9KNI. Very fine Emile, and I understand about the power, so I shall not keep you. I will QSL via your manager, F6TLK, and thank you so much again for meeting the schedule. Very best 73's to you Emile. TN8BP, here's W9KNI signing clear. Au revoir!"

"Roger, Roger dear Bob. my best wishes to you and your family. W9KNI this is TN---."

And just like that he is gone. He wasn't kidding about losing power.

Gone, but not forgotten. Three or four stations suddenly start snarling over him. A moment later several more stations are jumping in and calling, obviously blind, having seen the spot. But Emile is gone. As I sit there smugly noting the details in the log book, I listen idly to the chatter on the frequency.

"Boy, did you hear that? That W9KNI had a TN8 come back. I didn't even know one was on, and then I hear one calling that W9. What do ya got to do?" The fellow signs his call – he was the one who spotted the TN8 on the spotting net.

"Yeah, that's the truth. Some guys sure are lucky. OK, Charlie, thanks for spotting that one. Maybe next time. I'm going back to watch some more of the Hula bowl."

I sit there, grinning from ear to ear over that exchange. Yup, I sure was lucky. Lucky that I went to the trouble to learn some French. Lucky that I happened to go digging through the French DX phone band every weekend for months. I start tuning down to 14100 again. Maybe I'll get lucky again, this time on a TJ1.

Notes: Since this chapter was written for the original edition, my friend W9BW, George Hanus, died tragically of cancer at a very premature age. This chapter is dedicated to his memory. Vale, George.

DX'ers interested in learning how to QSO in other languages would be well advised to first learn the basics of the subject language through traditional techniques. But other resources are available; there are books available for ham QSO's in other languages. These usually also teach the alphabet so that call signs may be recognized. And almost always, hams speaking other languages are truly delighted to hear an American trying to speak their language, even if very badly. Not only that, but your chances of a QSL from such a QSO are much higher!

23

Winning, Losing and Playing the Game

Winning in the pile-ups is fun, a lot of fun. And losing is not fun, especially when an all-time new one is at stake. But one of the facts of life of each and every pile-up is that each time the DX station makes a QSO there are many losers as well as the one winner.

As we have seen in earlier chapters, when you are the loser, the positive approach is to try to learn from each loss; what are the habits of the DX operator, where should I transmit my next call, was my timing wrong or my call too long? What should I have done differently, so that he might have come back to me instead of someone else?

But sometimes, the experienced DX'er gets into a situation where it quickly becomes obvious that there is no hope of a QSO. And it is then the frustrated DX'er shows the world, or at least himself, what kind of person he is. Does he QSY and wait for another day? Or does he cause needless or even intentional QRM?

And sometimes, even though it would certainly seem that a QSO with a DX station is possible, or even probable, no matter what the DX'er does, he is wrong. He zigs; the DX station zags.

And vice versa. Building character is all very well, but it's hardly as much fun as winning.

Yet, in a pile-up, by definition, for every winner there are losers, the operators whose calls are not being written into the DX station's log. The DX'er is not alive, and never will be, who has gotten to DXCC by working each country on a single call. We are all losers at least a part of the time, and in truth most of the time. And that most certainly includes your author.

Losing is a part of DX'ing. If every DX'er always won on every call, attaining the Honor Roll would be no big deal. We all have to lose, to be losers, so that we can become winners too. Winning and losing are intertwined parts of DX'ing.

Do you like to lose? At times it actually can almost be fun; like when you are intentionally running five watts, chasing after one you don't need, and trying out new techniques of pile-up cracking. But for the committed DX'er, losing QSO after QSO in a pile-up over what would be a new one is a frustrating experience. And no fun at all.

First, a comforting thought. A fellow does not go to the trouble to get a license at a rare DX QTH, get some sort of station together, erect antennas, and print QSL's to be QRV for only a single operating session. There will invariably be another chance. At this writing, every country on the current DXCC list has had at a minimum of two different operations from that country.

One of the real trials of DX'ing are the actions of other operators on the frequency of a DX station, especially a rare one. We all know of what I speak. The policemen shouting "up" or "split", frequently giving some offending station's call at the same time, often applying an uncomplimentary name. "W9KNI – up five, you idiot". Certainly it has happened to me – and to everyone. And I know, no matter how careful I try to be, it will happen again that I find myself calling on the DX station's frequency when he is operating split. The VFO switch is in the wrong place and there you are, making a fool of yourself for all the world to see.

The "frequency policeman" if he must say anything at all should be as brief as possible to avoid QRM'ing the DX station. If there is already a "policeman" on the frequency – don't become a second – or third or whatever – one is enough; usually more than enough. And if you do take on that self-appointed role, don't be abusive – be polite. If someone else wants to be obnoxious and take over the function – let them have the job and move off. Don't create a confrontation. And on CW, unless you know how to put your VFO at least 250 hertz off that of the DX station – please – don't even try to chastise the unfortunate who is calling on frequency. You will do as much damage or more.

Another thing patently unneeded on a DX operator's frequency are the all too frequent snide comments, about the DX station and his operating, or the behavior of people calling in the pile-ups. While such comments might make the fellow making them feel better for a moment, they make a lot of other DX'ers unnecessarily angry and believe me, the remarks accomplish nothing. In the mean time they contribute chaos to a situation, and very probably cost another operator the surety of his QSO. (See chapter 15 – exactly that situation has happened to most of us – where you never could be sure you had a QSO because of an idiot on the DX station's frequency.)It is very bad manners at the least.

Not all DX operators are going to be OH2BH, G3SXW or K9AJ. Some of them are going to be inept and maddeningly slow. That is the game – if you count yourself a competent DX'er you have to learn how to work the best – and ALL of the rest. Working the great operators is fairly easy; working the newcomer in a rare land is much harder, the more so where spotting nets create instant pile-ups the new operator has no idea of how to deal with.

Do not get angry at such operators, no matter how frustrated you get – they are new to the situation just like you once were. Your first DX contact was probably not A51PN. You had to learn through experience how the game is played – so do they. Cut them a little slack – and if the fellow is obviously struggling and already has stations calling him, do him a favor – DON'T spot him on the net and overwhelm him.

But the worst situation is the intentional QRM of a DX station. This is especially true when the DX station is working by call areas, or by countries. It is also shockingly common when the DX station is not the perfect pile-up operator. Listening to some of the comments on a DX station's frequency, one wonders why the

DX station would ever again turn on his radio and work a pile-up. And – some of them don't. We are all then the losers.

There is absolutely no excuse, ever, for the intentional QRM of a DX operation. If you think a station is a pirate, say so – on the spotting net, not on frequency. If the DX station is operating in a way you dislike, send an e-mail or a letter. But don't vent your spleen on his frequency. If nothing else you are trashing the hopes of all the operators calling the DX station, enraging them and for what purpose? There is nothing you can do that is more harmful to DX'ing than to abuse a DX station or deliberately interfere with him.

I am going to repeat that line:

There is nothing you can do that is more harmful to DX'ing than to abuse a DX station or deliberately interfere with him.

Please – if you don't like what is happening, tune off the frequency or turn off the rig and go take a walk.

OK, let's move past that, and look at another operating situation:

You are having a careful, patient tune of twenty, needing little, and not expecting to find a new one on, but you tune because you enjoy the thrill of listening to an open band. You trip across a fairly decent pile-up; naturally you punch the synch button and listen intently. Yes, there's the DX station transmitting; OK, it's 9K2DR.

You don't need Kuwait; you've had it on the wall for a long time. But you have noted that it seems to be rather rare of late; that would explain the rapidly growing pile-up. You listen carefully for a minute or so; it becomes quickly obvious that a lot of the people in this pile-up do need Kuwait.

What do you do now? Do you fire up the linear and go in after him? After all, it's been a while since the joy of the last big pile-up. And you've always gotten out well in that direction. But then you remember the anguish you suffered when you were chasing a 9K2 for your first Kuwaiti QSO. And you leave the linear off. You tune off frequency for a moment to a clear spot, and reduce your power to 10 watts output. You grin; now you are ready to go mix it up in the pile-up. You probably won't be successful, but it will be fun. And if you are successful, a real thrill, far more than you would have gotten simply stomping your way through and showing the pileup what a big signal is all about. When you work him that way, you can say "Thanks for coming back to my 10 watts, OM" and thus instead of showing the pileup what a big signal is all about you have shown them what skillful operating is all about. Which would be the more satisfying? One of the nicer aspects of DX'ing is that you set your own handicap. If you want to chase DX only on Sundays, fine. If you are independently wealthy, quit your job and move to the ideal QTH complete with stacked rhombics and a resident technician, great. If you want to be the first fellow to attain the Honor Roll running one watt output, good luck.

The DXCC and WAZ awards check QSL cards for compliance with the award requirements only. Any other aspect of the QSO, be it on the QSL or not, is ignored. The DXCC department of the ARRL will NOT check your cards against the calendar to certify that all QSO's were made on Sunday mornings local time. And no one will mark your QSL to show the power you used, be it 10 watts or 10 kilowatts.

It is equally obvious, then, that when you hang wall paper with stickers on it in your shack, you are the one who knows how the DX was worked. If it was done with one watt, you take great pride in the operating accomplishments, as indeed you deserve to. If working DX on Sunday only is your thing, you will know how well you have conformed with your goal.

Honest pride and integrity make a wonderful combination.

24

DX'pedition!

My "DX'ers Tout Sheet" arrives, a day later than it should have, as usual. But, my unhappiness over the delay evaporates as I read the front page headline, "CLIPPERTON SOON." Clipperton! Always one of the rarest of the rare, one that has not been on the air for years. An uninhabited tropical atoll, French owned, surprisingly close to Mexico, and indeed, an island probably often visited by tuna fishermen.

But, getting a license and landing permission from the French government has appeared to be an impossibility for many years, ever since a DX'pedition to the island years ago had to be rescued at great expense to the French government. So, Clipperton has languished near the top of many DX'ers need lists for years. And it's one I need.

The story in the Tout Sheet gives all this information and more. It seems that a joint team of scientists and radio amateurs have formed a coalition to share expenses for an expedition to the island, and they have already secured all necessary paperwork! The government of French Oceania is requiring that the trip originate from Tahiti, not wishing to lend any credibility to Mexican claims to the island even though Mexico is a great deal closer. The call has already been issued; it is FO0CI, for Clipperton Island.

A sailing vessel, the "Tannu Hiva", has been chartered, and a crew of five French and American amateurs, along with three French scientists, are to make the trip. They are to be on the island for ten days.

And the departure date for the DX'pedition is only four weeks off, with estimated first operation ten days later. The DX'ers Tout Sheet obviously got a scoop on the story; there has been no talk on the bands beyond the occasional unfounded rumors.

According to DX tradition, standard operating procedure suggests I should schedule a two week vacation to Europe commencing on the date the DX'pedition has promised to first come on the air. That way, about the time I get back from my trip, they should be just getting ready to leave Tahiti for Clipperton. DX'peditions NEVER start on time, especially if it's one that you need.

I read further down into the story. Calls are listed; I look them over. I recognize two of them, but none of the rest. But the Tout Sheet tells a bit about the amateur members of the DX'pedition. Two of them are well known in contest circles, with one a Sweepstakes specialist. If he's a good Sweepstakes man, he should be ideal on a DX'pedition. Often a good DX'er goes on a DX'pedition and proves not very effective at the other end; it's not particularly surprising, since the skills needed to be a good DX hunter are far different from those needed to be the DX station working a huge pile-up in a fast and effective manner.

Ah well, it shouldn't make a lot of difference. With ten days time on the island, if all goes smoothly, the whole DX world should have an excellent chance to log the island. And the island is not too far from the equator, which means that even with poor conditions propagation should be at least adequate. And from the American Midwest, it should be an easy chip shot. I can't wait!

As the weeks go by, the bands and the DX bulletins are full of stories about the upcoming trip. The usual pleas for financial assistance go out. And, wonder of wonders, it begins to look like the group may actually leave within a day or two of the date promised.

Weekly, The DX'ers Tout Sheet carries the latest official information on the trip. With each issue, one set of problems are reported resolved, and new ones surface. One operator has to drop out of the DX'pedition, another is named to replace him. The captain of the "Tannu Hiva", the sailing schooner that is to take them to Clipperton, discovers that the group plans to take a number of fifty-five gallon drums of gasoline for the generators; his response is brief; "Non!" A compromise is reached; he will accept fifty-five gallon drums of diesel fuel, but no gasoline.

A mad search for portable diesel generators is conducted; and two are finally located in Ohio a week before the DX'pedition is scheduled to depart. An emergency appeal for assistance raises funds for air freight charges to ship the generators to Tahiti. A major argument ensues with the customs officials there, but finally a direct appeal to the governor-general helps arrange a nominal bond allowing the release of the generators, only forty-eight hours before embarkation. That the three scientists on the expedition are all French certainly proves to have been an excellent move on someone's part.

Finally the departure date arrives - and passes. The captain of the "Tannu Hiva" does not like the looks of a large low-pressure cell a thousand kilometers away, and suddenly twenty meter SSB is full of expert opinion on tropical depressions. There is also some mention of DX'er depression, as well. Then, forty hours later, and to everyone's surprise, the group departs on a favorable tide and wind.

For twelve days, the group wends its way cross the tropic sea, crossing the equator, onwards towards Clipperton. Nightly, a thousand DX'ers listen to 14,260, the official maritime mobile frequency of the DX'pedition. Tales of boredom, of sunburn, and of seemingly terminal mal-de-mer come from the "Tannu Hiva". Furtive phone-patches home are listened to on 14,340, where the American operators of the crew pretend to be maritime mobile on American flag vessels.

One of the DX'peditioners appears to have the soul of a poet, and his nightly schedules with his buddy near Minneapolis are full of the wonder of porpoises and flying fish, of sharks and albatrosses, of night time skies jammed with stars in strange constellations and of mornings at sea bright and fresh. His enthusiastic descriptions weave a magic that captures the imagination of all who listen, and they are many.

Finally, early one Tuesday evening, the crew reports excitedly that they have made landfall, with Clipperton clearly in sight. A spontaneous cheer goes up on the frequency, as fascinated DX'ers applaud. Because of the failing light, the crew decides to land the following morning, and start a celebration aboard ship, celebrating their arrival.

Wednesday, I come down with an unfortunate illness, and find myself unable to report to work. And it IS true that for some reason I had slept miserably the night before. It is also true that I had told the boss about the situation, and warned him that I might well take the day off to play radio. After calling the office, I am able to get back to sleep for a couple hours. After all, Clipperton is an hour behind Central Standard Time, and there's no way that they can be QRV before 11 AM local time.

At 10:30, my wife wakens me, and trusts that the Clipperton flu will not turn out to be more than twenty four hours in duration. Needless to say, I heartily concur, even admitting my doubt that she is likely to catch the strange malady. After coffee and toast, I ease into the shack, and fire up the gear. A quick check of 14,025 and 14,195 yields no sign of any pile-up; a further check of 21,025 and 21,240 offers the same result.

I busy myself for a few minutes making sure all is in readiness. Yes, the antenna is on 216 degrees as close as I can hit it, my bearing to Clipperton. All the gear checks out. I am afraid to turn the antenna to check the band out; I had a nightmare last night that I had turned it to Africa, and while beaming at 90 degrees the rotator had frozen. Why take the chance? Besides, propagation would have to be really bad not to have a path to Clipperton.

The bands seem rather quiet, except for what appears to be an inordinate number of strong carriers near the frequencies the DX'pedition has said it would use. At 21,255, I hear a station calling FO0CI, but it quickly becomes apparent he is calling blind, hoping to get lucky. When he finishes his call, perhaps thirty stations take the opportunity to describe their opinion of this novel tactic in terms some observers might call distinctly uncharitable. Within moments, the frequency quiets down, but not before I begin to get an idea that the Clipperton flu has reached epidemic proportions.

I spend the rest of the morning going from band to band, checking regularly all the posted frequencies, all without success. Ten meters seems to be dead, but fifteen and twenty are OK, and indeed both seem to be in decent shape. On fifteen there is a fairly healthy pile-up on an 8Q7 station, and I can copy the fellow weakly, even though I should be getting 30 dB attenuation in that direction with my antenna on Clipperton. But I don't need an 8Q7.

I sit there, listening carefully through the noon hour, with no result. My wife brings me a sandwich and a glass of milk around 1PM, 1900 Zulu. I eat with one hand on the dial.

At 1320 local time, I check 21,025, and someone is passing out high speed reports. Yes! It's him! He just signed his call. The transmitter is still on twenty meters, and I make a panic QSY. The signal is not very strong, but the pile-up is growing fast. I start calling up five, as the FO0 says, and when I check the action up five, I find out just how many are people are home sick. What a zoo!

I keep calling, as I try to discern the pattern he is working. Darn; some traffic cop is all over his frequency. Wait a moment. The cop is saying something. Like PIRATE, PIRATE. Hmmm. Wonder if he's right. It's easily checked. I run the antenna around to the south, towards the south-east, and the FO0's signal picks up dramatically. I give one more call with the antenna SE, and nail him. I log it, but I already know I've been had; someone is having his fun and games. And within a few minutes, the station disappears, as it is more and more obvious that the station indeed is a joker.

The afternoon continues on, with no real news or hint of the real Clipperton gang. I don't know whether to worry or not, although of course I'm anxious. Some major DX'peditions have set everything up completely before they make the first QSO; others have gotten onto the beach with a vertical and a small gen-

K3SUK

erator and started making QSO's within thirty minutes of the first landing, while getting the rest of the gear set up. And I have no idea how the Clipperton gang plans to start. And from the comments I hear, neither do a lot of other fellows who, like me, are waiting.

By late afternoon, though, I am beginning to have real concern, as there is no new information. Then, around 1730Z, a W4 starts telling a buddy he has just seen the latest weather maps made from satellite data, and there appears to be a major disturbance in the Clipperton area. I go upstairs and ask my wife to watch the evening news, and to call me just before the weather forecast.

She does, and soon I am running back up the stairs to see if there is anything to the report. There is, there certainly is; a large, ugly looking pattern of swirling clouds, so definite that the weatherman points it out for its potential effect on the Mexican coastal area around Acapulco. He says nothing of Clipperton, of course, but needless to say, my worries are becoming more profound.

I sit most of the evening in the shack, waiting and hoping for good news, but there is no news, nothing except obviously unfounded rumor. I get to bed fairly early, around ten PM. After all, I did sleep badly last night, and certainly there's little hope of Clipperton coming on with darkness there, and likely very stormy.

I rise very early the next morning, and start tuning twenty for any news. Again, I find nothing new. I bring in the newspaper and have a look at the weather map. The depression has been upgraded to a tropical storm, with speculation noted in the paper that it may turn into a hurricane before it strikes the Mexican coast. The storm is named "Flora". I dress and go to work, rather depressed about the whole situation.

About 11 AM, I get a call from a buddy in California; there is no news. At three, I clean off the desk, and head home early, with the boss's blessing. I am on the rig as soon as I get home; but still no news. I catch the weather again. Flora appears to be well clear of Clipperton, and aiming at the Mexican coast.

I keep checking the bands through the evening without success. Conditions on twenty are quite good, but that is no joy tonight. I go to bed rather disturbed; although I don't really know any of the members of the DX'pedition beyond meeting two of them at Dayton once or twice. But, with all the hype

prior to the departure, and the heightened awareness because of the rarity of Clipperton, DX'ers everywhere are seriously concerned; the DX'pedition has become an institution, with its nightly progress reports so widely listened to, and with the wishes and hopes of DX'ers world wide riding on the "Tannu Hiva".

Thursday and Friday go on with more of the same. Flora apparently slammed into Mexico at just below hurricane strength, and did a great deal of damage, though more from flash flooding and mud slides than from wind velocity. But there is no word at all from the crew of the "Tannu Hiva".

Friday evening, a report is received from some hams in San Diego. Apparently, strictly by coincidence of course, a Navy Orion anti-submarine plane has made a training flight off the Pacific coast of Mexico, then swinging out to Clipperton as the corner of a triangle and heading back for home. The crew had made several low level passes over the island, and had seen extensive damage to the palm trees, and what appeared to be recently deposited boxes, crates and drums in considerable disarray on the beach and in the water of the lagoon. K6AAR, the navigator on the flight, was quite sure there was no other sign of life.

Opinion on the bands generally feels that the news is more good than bad; with a strong likelihood that the crew had evacuated the island in the face of the oncoming storm, and had likely ridden it out hove-to on the schooner somewhere well clear of the island. Should this be the case, there would be little doubt they would be trying to slog their way back to the island in the backwash of Flora, and could well come on to the air at any minute.

Of course, hope springs eternal, which was probably first written by a DX'er. And, on the other hand, it seems strange that there has been no communication whatsoever from the boat, via amateur or commercial frequencies, when before they were QRV nightly. Regardless, it is certain that the original plans have failed. The bands are full of rumors but all seem to be without substantiation.

Saturday morning, I sleep in rather late. The tension of the last few days has taken its toll of me. But by 10:30, I am up and about,

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EQUIPMENT

and by 11:00 I am at the rig. I check out 14,260 for the latest news. Nothing is new, but one of the San Diego gang suggests that the commander of the anti-submarine group at the naval air station, KD6BGD, was distinctly unsatisfied with some aspect of the recent Orion training flight down the coast, and has indicated they are going to do it again today. Perhaps by nightfall we'll have an update.

I start to tune twenty meters again; trying to get back into a more normal pattern of activity. I keep telling myself that no news is good news, and I start listening carefully to the normal activity of the band. A check of fifteen shows it to be in fairly good condition. West European signals are still coming through, and there are several good Africans QRV as well. The antenna rotator hasn't frozen, and all the gear seems to be in good order. I run across my friend Ivan, F3AT, and I fill him in on all I know about the DX'pedition. In turn, he has some excellent information for me on a TJ1, knowing that to be one of the last Africans I need. When I sign clear, a couple other stations sign simple 73's as well; apparently there was something of a European audience on frequency, hungry for the latest news.

I have a light lunch, and check again on 14,260 to see if there is any word from the Navy. Apparently, the training flight is supposed to include night flying, so the departure time for the flight was moved to a later hour. However, there should be at least an hour of daylight left when the plane crosses Clipperton; coincidentally of course. In any case there won't be any word for several hours yet, and most probably none until the flight has returned unless an emergency situation is discovered.

I slip the transceiver back down the band to twenty CW, and start to look around again. Slowly, I start wending my way up the band. There seem to be a lot of Europeans coming through, though no really outstanding signals. I keep watch for Africans, but hear nothing from that continent. I cross 14,025, where the Clipperton boys were supposed to be operating, but hear nothing except for some high speed ragchewing. I listen for a few moments; apparently they are talking about Clipperton too, but with no new information. It depresses me; I tune on.

I keep going higher in the band, finding nothing significant, although conditions certainly seem favorable. The eastern

European signals seem to be getting stronger; with LZ's and the YO's running S-8 and S-9; perhaps a goody from the Middle East will put in an appearance. I look at the dial; I am at 14,055. I keep moving up.

There's a CN2; a rare prefix and once a rare country, now the same as a CN8. Above him is an IS0 with an excellent signal; another that was once considered rather rare. I keep going higher; often you find a good bit of DX lurking high in the band away from the mainstream of the DX world.

There's a rather weak backscatter signal; I listen; hmmm. The way he's sending, that fellow sounds excited. Let's see, we're on 14,047. Nothing spectacular about that. Darn, there's a little QSB; I'm having trouble copying the fellow. OK, he turned it back, but he didn't give the other fellow's call sign. It was a W8, though. I got that part OK. I try to find the station he's working. Nothing. I listen extra carefully. Nothing at all. It seems unlikely that someone is working split frequency this high in the band; that's the sort of technique you find much lower in the band, like around 025.

On a hunch, I switch to my Butternut vertical. That I can't hear the DX station with my yagi on Europe makes me suspect that whoever it is is coming through on a different bearing; any signal from the north-east DX paths is not going to be so much stronger for a W8 that he can copy when I can't even detect it in W9 land. Besides, the W8's backscatter was rather weak; suggestive of a different path.

My hunch pays off; there IS a weak signal in there. Although the vertical does not hear anywhere near as well on twenty as my yagi, on the other hand it is non-directional. The signal is too weak to copy on the vertical, although detectable, which is better than the yagi pointed at Europe can do. My curiosity aroused, I start to swing the yagi around. At 135 degrees, I have a listen. Nothing, dead. I check the "V" again. Same signal, same strength, still transmitting. No, wait, he just turned it over to the W8 again.

The W8 is very weak on the yagi, and little better on the vertical. I'm just going to have to sit this one out, and wait till the other station starts transmitting again. While I wait, I decide to swing the yagi around another 90 degrees to 225 degrees, and see what happens. I do, and the W8 get's somewhat stronger on the backscatter, though still not really good copy. But he still sounds excited. His fist is a bit choppy, and his spacing is terrible. Just in case, I punch the synch button to lock both VFO's together.

There, he turned it back, and now I am able to copy the other station much better. He's at least 449. "...OK WILL CU BK HR IN 30 MINS BATTERIES SHUD BE GUD AT LST FEW MR HRS ES THEN WE ARE QRT TNX VY MUCH 73 DE FO0CI SK QRZ?"

FO0CI? The Clipperton crew? I don't know what to think of this bit at all; frankly I am rather skeptical. Still, the beam heading IS correct. But the frequency is all wrong. And batteries? No way. Still, as the Old Bard said, work them first and worry later. I call, a simple, "DE W9KNI K"

Whoever it is comes right back, "R W9KNI 599 BK".

I respond, "R TU 559 559 73 ES GL DE W9KNI SK".

I pick up the two meter microphone; "Hey, I don't think I believe it, but there's a station signing FO0CI on 14,047, that's 14,047; here's W9KNI."

I get a quick response, "Hello Bob. What's the deal? Here's K9MM."

"Hello, John. Well, the beam heading seems correct, and that's about all. The frequency's wrong. And the fellow is talking about his batteries not lasting very long. Still, if he was a pirate, I would think that he'd set up on 025, and pretend to be real. Anyhow, he's easy to work. He's working an N5 now."

"Yes, I hear him. OK, I guess I might as well work him. Thanks. Here's K9MM."

I listen to them. John gets him easily, and asks the operator what his QTH is. The FO0 comes right back, signs clear and calls QRZ without responding to John's question.

"I don't know, Bob. That sure is a strange one."

"You’re darned right. Let's check the heading as carefully as we can."

"OK. There, he's working a VE1...Well, it sure looks close to me."

"Yeah, me too. I wish he were stronger; then I could null him off the side of the antenna. But he's way too weak."

"Same here. I dunno. It's possible, at least."

"Yes, I agree. I think maybe we better phone a few of the gang. After all, `Work them first and worry later,' you know."

"Right. OK, I'll call all the ones before W9NB. You get NB and the rest. Here's K9MM."

"Roger. Here's W9KNI."

John and I call all the members of the club that the club want-list shows as needing Clipperton. I have eighteen calls to make, and get the usual responses; a few no answers, a few that don't believe it to the point that they can't be bothered, a few out for the afternoon, but will leave a message etc. Still, about twenty members show up, between John's and my efforts, and all get through easily.

We have just had the last one through when the FO0 starts calling the W8 blind. There is no response. The FO0 calls again, and again no response. The FO0 seems to disappear. We wait, listening, talking about it on the two meter DX channel.

No one knows quite what to make of it all; no one really believes that they worked Clipperton, but again, every one is hoping. In the mean time a couple of the non-believers report in on the channel.

There, the FO0 is calling the W8 again, and still no reply. The remaining fellows on frequency get through with ease. The FO0 calls the 8 again; I look at my log. It is definitely over a half hour since I QSO'd the station, whomever he is. His signal seems to be starting to get chirpy. Wait, there, the W8 is back.

The W8 is still too weak to copy well, but I get the idea he has been on the telephone making calls on behalf of the other station. The W8 makes a longish transmission, and the most of what he is saying seems to be reassuring notes. He turns it back to the FO0.

"R FB ES CPY OK MUCH TNX JACK ES KNOW IT IS A RL RLF FOR OUR XYLS BT THIS IS ONLY SET OF GOOD BATTERIES ES NOT KNOW HOW LONG WE CN BE QRV BT IF WE CAN GET BOAT ENGINE GOING AGN WE BE QRV ON TRIP BK BT WE QSY TMW AS LOST ALL SUPPLIES IN STORM ES ONLY ENUF FOOD ES WATER FOR RETURN TRIP BT PSE QSP INFO TO GANG ON 14260 SSB

ES WE PROMISE AGN NEXT YR BK QRU NW ES WE BE QRV TILL BATTERIES GONE THEN WE RETURN TO BOAT AND LV FOR HOME BK 73 ES TNX AGN VY MCH W8OWK DE FO0CI KN"

I start breathing again, stunned by that message. There is much left unsaid, much reading to do between the lines, but obviously a great deal has happened to the crew of the "Tannu Hiva" since they were last heard from. My belief in their being genuine is firm now. And it appears that in fact their batteries are nearly over the hill. The signal is definitely weaker, and the chirp more pronounced, obviously a sign of failing regulation as the batteries are dying.

There, they are transmitting again; "R FB JACK ES TNX AGN 73 QRZ DE FO0CI K"

There is a lot of chatter again on the two meter frequency, and several people, the earlier skeptics, are calling desperately now. But so are a lot of other stations in other parts of the country. I make a quick call to my buddy in California to tip him off; within seconds he is in the pile-up too, and scores on his second call. Our laggards make it through as well over the next six or seven QSO's, and it looks to be a darn good thing for them that they do; the FO0 signals are really getting weaker, and he is slowly moving up in frequency. The chirp is worse, as well. His batteries are clearly on their last legs.

At the same time, the pile-up is starting to get big, really big. The FO0 is having trouble picking calls out. He obviously is not using one of the regular rigs that was on the trip. And, suddenly, he starts dropping fast, and within 30 seconds he is gone. I sit there, staring at the rig, my imagination trying to fill in what has all the appearances of having been a desperate venture. And it looks like I have a legitimate QSO with Clipperton, as well!

The phone rings. I shake myself out of a daze. It is my friend Jim in California.

"Bob, did you hear the story that W8OWK is passing out on 14,265?"

"No, I can't copy him here, he's inside our skip zone. And besides, I'm still listening on 14,067. Tell me about it."

"OK, I thought that might be the case. Call me on 14,230, I've got most of the dope off the two meter net. See you."

"Right, thanks, Jim." I hang up and QSY to 14,230, and there's Jim calling me.

Jim passes along the story as learned from W8OWK. Though the FO0 had had to be brief, a good deal of information had been passed. It seems that the morning after landfall the crew had gotten all the gear ashore in good order, along with food, fuel, water etc. But the weather had started to deteriorate, and, instead of blowing over as they had expected, had turned into a major storm.

They had returned to the "Tannu Hiva" to ride out the storm. The "Tannu Hiva" had been well anchored in the lee of the island, but the wind had started to shift. They had tried to raise the anchor, but apparently it was jammed under some coral and they were unable to raise it in the face of the rising storm. Finally, they had had to cut the anchor line, as the wind shift was forcing them into dangerous waters. After they had cut the anchor, the winds had blown them far from the island. The captain and the native crew had managed to set a sea anchor, and the boat finally rode out the storm hove-to, drifting slowly towards Mexico.

After the storm had abated, they had returned to the island, but had had to do so under sail, as the "Tannu Hiva's" auxiliary engine had apparently somehow been damaged while the boat was being tossed around, as had the boat's radio.

That had ended any hope of communication, as the captain of the "Tannu Hiva" absolutely forbade use of the batteries for any purpose until the engine was started, as the batteries were necessary to turn the engine over.

When they had returned to Clipperton, they discovered that all the supplies and equipment left on shore had either totally disappeared, or had been rendered useless by the effects of storm and sea. And, that included the food and water planned for the shore stay.

The amateurs, the scientists and the captain of the boat had mutually discussed the situation, and it was agreed to stay on the island twenty-four hours, then begin the return trip to Papeete, Tahiti. All agreed to plan a return trip later, and the scientists felt that even a day's work would be very worth while, and make a return trip even more valuable.

One of the amateurs had kept a simple three watt home-brewed direct conversion transceiver on the boat, with one set of flash-light batteries to operate it, just "in case", and further had set up an emergency back-up schedule with his pal W8OWK if there were problems. Because of the lack of selectivity and the other limitations of the rig, a frequency high in the band had been agreed on.

And so it was that Clipperton was on the air. After the one brief operating session, nothing further was heard from the crew of the "Tannu Hiva" for nine days, when they made landfall at the Marquesas islands. There, they managed to get the boat's engine repaired and running, and hence were able to get the regular transceiver operational as well. And then the whole story was told.

The operating session had managed 53 QSO's from Clipperton, with 24 of them W9's in our club. We really were lucky on that one. And it certainly was most gratifying to hear our calls read out of the log as they completed the last leg of their trip, going from the Marquesas to Tahiti.

The operation had left one last question in my mind. What had happened to the second trip of the Orion airplane? I asked Jim about that. He found out, and I got the story from him later. Apparently, the Orion had had a hydraulic problem an hour out of San Diego, and had limped back home for minor repairs. The flight the next day had been canceled when word of the crew of the "Tannu Hiva" had been received.

It was weeks before regular QSO's seemed interesting again.

Author's note: This story, while fictional, in fact represents pieces of several true stories, and could easily have happened as described. Since the original publication of this story, Clipperton has become rather more available, thanks to changes in French government policy. Also, the story was written before the advent of wide-spread spotting nets, and the author decided in the case of this chapter to leave them out of the story, and pretty much leave the story as originally written. But for me and for many long-time DX'ers, a QSO with Clipperton will always give a special thrill.

25

The Last Secret

There is one last secret vitally important to making the Honor Roll. If you have followed this book, or pursued a DX'ing career similar to that taught by this book, and if you are reasonably competitive, within two or three years you should have a score in the area of 275 to 290 countries. But at this point your progress seems to come to a dead stop. You have cleaned the bands out; there is nothing on that you need, or perhaps one exceptionally elusive station left for you to work. And you still are fifteen countries short of the bottom rung of the Honor Roll ladder.

You have developed good listening habits; you can wring the DX out of any band.

You can almost always tell a DX station from a W, and you can almost always recognize a W station in the act of QSO'ing a rare one. Your ears can knife through SSB QRM to copy the report from a weak and rare one right under the edge of a phone patch. You can copy lousy fists from weak stations on noisy bands in heavy QRM. You can predict secondary propagation paths with considerable accuracy to most any part of the world, and that includes the long paths.

In short, you are a complete DX'er.

But, after a couple of years of unremitting and unrewarded tuning, the thrill of it all begins to pall a bit. Sure, some DX'pedition will be along sooner or later to add to your total. And you know you will be able to work him with little trouble if everything goes well. And, the pile-ups will be fun, besides.

However, DX'peditions to the hard to reach places occur only on a rare basis. And after a couple more years, you have confirmed everything except the places that are either hard to reach or impossible to get appropriate permits and licenses for. And you are still seven countries from the Honor Roll.

New ones come very slowly; two a year at this point makes a very good DX year. Boredom sets in, and too often the DX'er gives up DX'ing and takes up other interests. After all, to have become a good DX'er took a lot of time, and required the development of multiple skills, honing the operator and his station into a highly efficient operating machine. If the skills start to lapse from lack of use, and the operator loses interest out of boredom, when the time comes to work the new one that finally becomes active, too often the terror of the bands a few years back is missing from the logs, another victim of malaise.

The secret to attaining the Honor Roll, then, is to cultivate new interests within amateur radio that are consistent with the station and antennas a DX'er needs. For example, take up QRQ CW DX ragchewing. In years past, to spend much time ragchewing was time wasted that should have been spent tuning for the new one. Now, there is no new one, and the ragchewing is the interest that keeps you QRV waiting for that new one. And, the overseas friendships formed can be tremendously satisfying, as well, not to mention the source of much good DX info on the last few that you need.

Certainly another important interest is contesting, and a lot of DX'ers spend considerable time preparing themselves and their stations for the next contest.

Many DX'ers chase band countries. Now that ARRL has band-country DX programs recognition is available for those interested.

Some DX'ers chase countries all over again using QRP, and build significant scores that way. It certainly is an ideal way to wait for the new ones, as it helps keep your operating skills sharp and keeps you optimizing other aspects of your station. Just don't sell the big rig!

Another operating activity is hunting certificates and awards other than the DXCC and WAZ variety. At times it seems like there are an unlimited number of awards, and most DX'ers who are chasing them specialize in two or three maximum. Some fellows chase Russian oblasts; others work towards the tough Japanese Cities Award, the French DUF certificate, or RSGB's Islands On The Air. You can chase Swiss Cantons, Japanese prefectures, New Zealand counties, German states, or Bermudian parishes, to name a few. There are plenty of awards to chase, and excellent directories are available to help manage them.

You can check into traffic nets, you can keep schedules with maritime mobile stations, you can explore new modes of operating. The important thing is to keep your operating interest high, to keep the station operational, your skills sharp, and your juices flowing. That is the final secret of making the Honor Roll, both onto the bottom rung, and then to the top.

As a matter of interest, in the period since 1968, it has been possible to go from zero countries to the Honor Roll in never more than eight years, usually less. And this is on a reasonable basis, which is to say working every country that was at least occasionally available for all to work. Countries that have not been on the air for years do come back on, sometimes when no one would guess that there was any chance of operation.

There are two points I want to leave with you. One is that while I have tried to cover most of the significant operating techniques used in the DX game, there are undoubtedly more, including some I never learned, and perhaps a couple I've forgotten. And there are a few I think very little of, and will not dignify by printing them. But in any case, you will have learned by now that every successful technique has a logical basis and a methodology, one that makes sense when thought out.

Undoubtedly you will think out a few new ones; but in any case whenever you hear anyone working what would be a new one for you, ask yourself, "Why did that station get that contact? How did he do it? Did I not do something that could have helped me get the QSO?" That kind of analysis will help you keep learning new techniques, be they in the pile-up or in open band tuning.

The other point is to remind you that DX'ing in terms of the DXCC and the Honor Roll is a never-ending game. That means, among other things, that if you don't make it through a pile-up for a new one you need, don't despair. You will get another chance, sooner or later. Probably sooner. For example, there is no country I have worked that I have not heard several times at a minimum, times that I could or should have worked the station. Be patient; that is the essence of the successful DX'er.

Do honor to our wonderful hobby. Be responsible. Help make it better, not worse. If you get angry at what is happening in a pile-up, don't say what you think on the air. Observe the terms of your license. Support your national amateur society and be involved in it.

Stay active, be ready, and you are sure to be on the Honor Roll if you want it badly enough. Good DX'ing!

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Conclusion

And so it ends. Hopefully, this book has helped you learn at least a little about DX'ing, and perhaps a great deal. And, I sincerely hope that at the same time you will have been entertained by some of the stories of life in the trenches, and perhaps learned therein as well.

By now you will have figured out that I love DX'ing. But the game is nearly over for me. At the present time I have them all. This is not bragging, but rather regret that there is little more to do in chasing countries. I am still having fun working stations with 10 watts – but I have 308 countries that way too, so again there is not much left to do. But it has all been fun; a lot of fun, and it has changed my life as well, both career wise and in the wonderful friends I have gained, both world-wide and closer to home. Many of their calls are sprinkled through the book.

I have found other interests in high frequency operating, and they too are rewarding. I plan to be on the bands for a long time yet.

There are two points I want to leave with you. One is that while I have tried to cover most of the significant operating technique used in the DX game, there are undoubtedly more, including some I never learned, and perhaps a couple I've forgotten. And there are a few I think very little of, and will not dignify by printing them. But in any case, you will have learned by now that every successful technique has a logical basis and a methodology, one that makes sense when thought out.

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DX'ing is a wonderful hobby. Be responsible. Help make it better, not worse. If you get angry at what is happening in a pile-up, don't say what you think on the air. Observe the terms of your license. Support your national amateur society and be involved in it.

And thank you for reading this book; it's been fun writing it. Good DX'ing!

de W9KNI

Appendix

There are several references in the book to the "DX'ers Tout Sheet," a mythical weekly DX bulletin. While the Tout Sheet is fictional, there are a number of DX bulletins published which are most helpful to the serious DX'er.

At present, there are paid subscription bulletins from two publishers:

"The Daily DX Bulletin" and the "Weekly DX Bulletin" are offered as e-mailed newsletters only to subscribers. Free sample subscriptions are available. Go to:

http://www.dailydx.com for details.

The QRZ-DX Weekly Newsletter, published by DX Publishing Inc. is available delivered as a mailed newsletter and or as an internet .pdf file. DX Publishing also publishes bimonthly "The DX Magazine" offered by mail. Contact DX Publishing by mail at P. O. Box DX, Leicester, NC 28748-0249, and include a self addressed stamped envelope for reply and sample bulletins. You can email to: qrzdx@dxpub.com or phone to +(828)683-0709 or go to their web site at http://www.dxpub.com

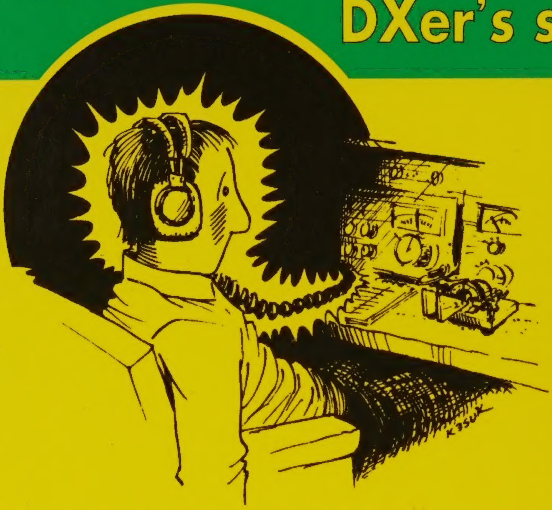
There are, as referenced earlier in the book, numerous other valuable DX resources, including several excellent free Internet DX Bulletins. In view of the author's experience that free web site bulletins change so frequently that a listing is not provided here.

Instead, the author strongly suggests the reader go to his or her favorite search engine and look up simply "DX". The resources you will find will astonish you – or at least they did me.

73 & DX

Bob Locher W9KNI

"...sure to be the most important operating accessory in the rising DXer's shack."



Since first publication to rave reviews in 1983, W9KNI's masterpiece, "The Complete DX'er" has become the guidebook for the rising DX hunter. This new third edition fully retains the approach and feel of the original classic. Every significant aspect of DX'ing is covered, from learning how to REALLY listen, how to snatch the rare ones out of the pile-ups, and how to secure that elusive QSL, plus advice on siting, equipment selection and antennas. Chapter after chapter of "reports from the front" detail life in the pile-ups, the excitement of landing the new one, the agony of defeat; entertaining and educating at the same time. This third edition is certain to retain its status as an all time classic.

From reviews of the earlier editions:

The DX Bulletin: ...Spills the beans about operating techniques that are dark mysteries to most operators.. His easy conversational style never condescends to the reader.. A timeless work!

QST Magazine: ...Sure to increase the competition for DX... catches the intangible allure of of our world of DX...

Huges Fullerton ARC Bulletin: ...Peppered with interesting narratives.. It gives one the notion that DX'ing is not a rich man's game, but rather an art-form that can be mastered and enjoyed regardless of the of the amount of hardware in the shack and on the tower.. A course in DX technique you will want to refer to again and again...

Westlink: ..Simply the best book of its type ever written.. Almost spell binding.. Simply said, The Complete DX'er is a book all amateurs will find interesting and entertaining, even if they spend all their time on their local two meter repeater.

by Bob Locher, W9KNI

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